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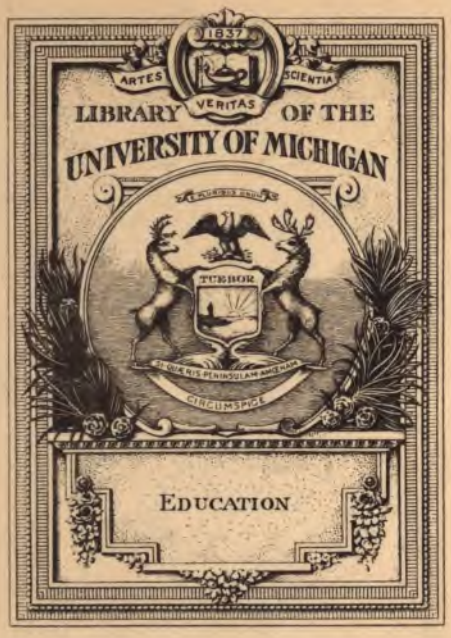
SURVEY OF THE ST. LOUIS PUBLIC SCHOOLS

CHARLES H. JUDD

EDUCATIONAL SURVEY SERIES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Survey of the St. Louis Public Schools

EDUCATIONAL SURVEY SERIES

Survey of the St. Louis Public Schools

By CHARLES H. JUDD
DIRECTOR OF THE SCHOOL OF EDUCATION
THE UNIVERSITY OF CHICAGO

Assisted by

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IN THREE PARTS

PART ONE—ORGANIZATION AND ADMINISTRATION

YONKERS-ON-HUDSON, NEW YORK
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PREFACE

THE survey of the St. Louis schools was projected by the Board of Education for the purpose of securing a body of facts for presentation to the public, primarily to aid in the passage of a bond issue of $3,000,000. The urgent need for new school buildings necessitated other sources of revenue than the usual ones open to the Board of Education, and an issue of bonds seemed to be the preferable method of securing additional funds.

In order that the voters of the city might be fully acquainted with the situation which had actuated the Board and its executive officers in proposing a bond issue, it was felt that a complete survey of the school system by disinterested experts, from outside the city, who would pass judgment not only upon the critical building situation but also upon the general financial condition of the schools and the efficiency of their organization, was necessary.

The following facts give a brief history of the survey:

Authorized by the Board of Education, May 11, 1916, and Director appointed.
(Official Proceedings, Volume XXII, page 976.)

Survey of instruction completed by the close of the school term, June 16, 1916.

All other parts of the survey completed in early summer, 1916.

Preliminary report of Director to Board of Education, July 11, 1916.

Final reports filed with Board in August and September, 1916.

Cost of survey, $9,780.06, excluding printing of reports.

The printing of the survey under the supervision of the Superintendent of Instruction authorized April 10, 1917.
(Official Proceedings, Volume XXIII, page 870.)

Survey printed and published by the Board of Education, March, 1918.

Printed and published by World Book Company, in the Educational Survey Series, September, 1918.

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The organization of the work of the survey and the assignments of the members of the staff were as follows:

Dr. Charles H. Judd, Director of the Survey

General Statement.....Charles H. Judd

I. General Organization.....H. C. Morrison

II. Records, Observations and Tests of Schools

A. Elementary Schools

1. General

(a) Non-promotions and two-quarter Promotions.....Charles H. Judd

(b) Observations of Elementary School Instruction.....Geo. A. Mirick

(c) The Course of Study.....J. F. Bobbitt

2. Reading.....William S. Gray

3. Arithmetic.....Charles H. Judd

4. Handwriting.....F. N. Freeman

B. Special Schools.....W. F. Dearborn

C. High Schools.....A. B. Meredith

III. Administration

A. Supervisory Organization

1. Music.....J. Beach Cragun

2. Drawing.....F. H. Daniels

3. Physical Education.....Geo. W. Ehler

B. Divisions of Administration

1. Attendance Department.....H. C. Morrison

2. Department of Hygiene.....E. A. Peterson

C. Appointment of Teachers and Teacher Training.....Charles H. Judd

IV. Building

A. Construction.....W. R. McCornack

B. Hygiene.....F. B. Dresslar

C. Use of Buildings for Classes.....S. O. Hartwell

V. Finance.....H. O. Rugg

In the publication of the report the lengthy documents prepared by Messrs. Cragun, Daniels, and Ehler were omitted, because the findings of these members of the survey staff related so largely to the intimate problems of single departments that it did not seem economical to attempt to give them general publicity.

The publication of Volumes I to V and VII of the survey was completed under the editorial supervision of the superintendent of St. Louis early in 1918. The Board of Education of St. Louis did not find it feasible to supply the demands of school officers of other systems and of students of education for copies, and World Book Company therefore undertook to issue the survey in its present form. The original matter is reproduced without modification.

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PART I

Organization and Administration

PART I—ORGANIZATION AND ADMINISTRATION

CHAPTER I

GENERAL STATEMENT OF THE PURPOSE AND METHOD OF THE SURVEY

By Chas. H. Judd

Reasons for the Survey

The survey of the St. Louis public schools was organized by the Board of Education for the purpose of securing a definite body of facts on which to base its financial policy and with which to persuade the citizens of St. Louis of the wisdom of this policy. Until recent years the Board of Education has been able to secure sufficient funds for the current expenses of the school system and also for its permanent building investments from current taxes. These taxes have, however, been increased until they have reached the limit set by the state constitution. The demands for enlargement continue to increase and it is no longer possible to meet all of the requirements of the school system out of current income. The law permits a bond issue on vote of the citizens, the proceeds of which may be used for the erection of buildings.

From time to time the Board of Education has in its published reports called attention to the fact that this financial issue must be met. In some instances, however, members of the Board of Education have expressed doubt about the necessity of additional funds. They have even advocated

retrenchment as the solution of the problem. In 1915 the Board retrenched by omitting summer schools, and later they found it necessary to reduce the educational opportunities offered to adults in night school. These efforts to save money were not popular with the citizens and they did not hold back enough money to build the necessary buildings or relieve the general financial pressure.

The Board finally decided that it was necessary to ask for a bond issue for buildings. In the discussions which accompanied and followed this decision it was pointed out that the citizens ought not to be asked to vote on bonds without being given a body of evidence that would justify the request. The Board accordingly voted on May 11, 1916, to organize a school survey. This survey it was arranged should be made by educational specialists from outside the city and state. It was further arranged that the survey should extend into every department of the school organization and should furnish so far as possible a detailed, comparative estimate of the character and efficiency of each department.

The Survey Staff

For the purposes of the survey a staff was brought together consisting of the following specialists: Mr. H. C. Morrison, State Superintendent of New Hampshire, who made an investigation of the attendance department and of the general organization of the system; Professor W. F. Dearborn of Harvard University, who examined the special schools and the methods of selecting the children for these schools; Deputy Commissioner A. B. Meredith of New Jersey, who examined the high schools; Dr. E. A. Peterson of the medical department of the Cleveland school system, who made a study of the health department; Mr. W. [redacted] McCornack of the department of school architecture of the Cleveland school system, who, together with Professor F. B. Dresslar of the Peabody Institute, examined the build-

ings; Superintendent S. O. Hartwell of Muskegon, Michigan, who made a report on the overcrowded condition of the classrooms.

The elementary schools were tested in penmanship by Professor F. N. Freeman of the University of Chicago; in reading by Dr. William S. Gray, also of the University of Chicago; in drawing by F. H. Daniels, supervisor of drawing in Newton, Massachusetts; in music by J. B. Cragun of the School of Education of the University of Chicago. Mr. G. A. Mirick of Cambridge made a thoroughgoing inspection of the general classroom work in the elementary schools. Professor J. F. Bobbitt of the University of Chicago made a report on the course of study in the elementary schools. Professor G. W. Ehler of the University of Wisconsin has prepared a report on physical education and play activities in the system. Dr. H. O. Rugg and P. S. Kingsbury of the University of Chicago reported on finances. Leonard P. Ayres and Superintendent Morrison co-operated by reviewing the plans of the financial survey. The writing tests were worked up by Mr. S. F. Browne; the results of the arithmetic tests were compiled by Mr. J. H. Smith. Several sections of the report were prepared by the director of the survey, Dr. Charles H. Judd of the University of Chicago.

Methods of the Survey

Several methods of viewing the school system are available to the specialists who conducted the survey. In the first place, they may make observations and may report what they saw as the basis of their estimates. Every member of the survey staff had an opportunity to cultivate a first-hand acquaintance with the phase of the work on which he reports. The officers of the school system were most hospitable and most helpful. They gave a great deal of time and attention to the survey, offering every possible assistance to the observers who came from the survey office.

The observations made by surveyors would not be adequate if they were not supported by a body of evidence broader than that which can be collected by personal contact. There are two types of broader evidence which have been drawn upon. First, school records of various different types are objective and cover the whole system. Thus, there are promotion records and financial records. In many respects these records are very full and easily accessible. The school officers here again gave the survey unlimited assistance. There is one type of record which St. Louis does not have; that is a cumulative card record of the progress of each child in the elementary schools. It cannot be too urgently recommended that such a system be installed. It will cost something to set up the system and maintain it, but the proper administration of the individual pupil's interests will be greatly facilitated by such a system of records.

The second body of general evidence by means of which observation must be supplemented is collected through systematic tests. These were given in arithmetic, reading, handwriting, and music. The tests were again carried out at much cost of energy and time by the schools. The results are recorded in subsequent sections of the report.

After collecting facts about the school system, the survey staff is confronted by the task of interpreting these facts. The most direct method of evaluating school organization and school work is to compare what goes on in St. Louis with what goes on in other cities. The comparative method is liberally employed throughout this report. Where it is not possible to compare St. Louis with other cities it is often possible to throw light on the situation by setting one school within the system over against the others. Such an internal comparison of the evidence often makes it possible to solve by analysis a complex situation. Examples of this method will be given in a number of the later sections of the report.

The effort is made in all of the reports to present the observations and the other facts and comparisons with such clearness that the reader may form his own conclusions. In addition to stating the facts, each section of the report offers judgments and recommendations. These are presented with the reasons which led the various specialists on the survey staff to their conclusions. The discussions of policy which are presented often lack the impersonal character of the tabulated facts. It is, however, the duty of the survey to suggest, wherever possible, policies which seem to promise improvement over present forms of organization. Even if the suggestions are not accepted they will serve to emphasize the importance of the facts and will stimulate consideration of the possible methods of dealing with existing situations in the most advantageous fashion.

Major Result of the Survey

From the point of view of the School Board the findings of the survey with regard to finance are the matters of chief interest. From the point of view of the survey it is of first importance to point out that judgment regarding financial policy can be sound only when it is based on the broadest consideration of instructional efficiency. There will be much detail in the various sections of this report regarding class work which may seem irrelevant to the reader who is looking for an immediate answer to the financial question. Perhaps the simplest way of meeting the situation is to present in brief summary the leading conclusions of the survey, laying stress at the outset on those statements which have to do with financial matters. These conclusions can then be referred point by point to the fuller discussions which follow in the detailed reports.

It is found that the school system of St. Louis is a well organized and efficient system. Its central offices are more completely organized than are the central offices of most

school systems. This fact is reflected in the tables of costs.

The completeness of central organization can be defended. In a great system dealing with 80,000 children and 2,500 school officers it would be disastrous to leave the control to the accidents of undefined policy. Most of the criticisms of the school system which are contained in the subsequent sections of this report arise because there is need of more complete organization. The survey urges at a number of points an extension of supervision. In organization St. Louis is at the present time one of the leading school systems of the country. The development already worked out should be carried further.

While thus advocating an extension of organization, this report calls attention pointedly to duplications and incoordinations in a number of respects. From a financial point of view these duplications are not serious. They show, however, the importance of providing means of holding the system together in the firmest possible way.

Turning from the central organization, we find that the St. Louis system has provided buildings which are of a better type than the buildings in most cities, and it is spending more on their upkeep and operation than do most cities. In the matter of equipment also the St. Louis schools are better off than the schools of most cities. This appears in the tables of costs.

The arguments which can be presented in favor of excellent buildings are too obvious to require more than passing summary. The economy in future costs, the advantages in preserving the health of children, and the good example to the homes of the community are all reasons for building as good schoolhouses as can be erected. The ornamentation of school buildings is not a financial waste, and it is in the aggregate a small item. There is a possibility of slight saving in certain details. The survey does not, however, find grounds for recommending retrenchment in the matter of buildings. On the contrary, it is impressively evident that

the city has fallen behind in recent years in its building program and must in the immediate future take energetic steps to provide space for school activities. Suggestions with regard to details in building matters will be offered in abundance, but there is no doubt that the city of St. Louis must build more schools at once. There can be no doubt that the new buildings ought to fall, in no respect, behind the excellent buildings which have been erected during the last fifteen or twenty years.

In operating expenses, the St. Louis system is high in certain particulars, but it is in the main inexpensive and below the average of its class.

The high schools are expensive. The cosmopolitan type of organization which has been adopted is an expensive type of organization. It aims to provide a very wide range of courses and to duplicate the whole program in every section of the city. The result is that the costs of the high schools are large as compared with elementary schools. It may be remarked in passing that the salaries of teachers are average.

It has been argued in the Board of Education and in certain circles in the city that St. Louis ought not to provide as elaborate a high-school training as it does. The question thus raised cannot be answered by a survey. The problem is a social and economic problem and must be solved by the citizens in view of their willingness or unwillingness to provide higher education at public expense.

It may be pointed out that there is a general tendency in all parts of the country to improve very rapidly the educational opportunities of a higher grade which are being provided at public expense. There was a time when grave legal questions were raised with regard to the payment of high-school costs out of the funds collected for common schools. The day is past, however, when such questions as these are seriously raised anywhere in the country. The high school is everywhere recognized as a part of the public

school system. In many quarters there is a tendency to carry higher education even beyond the limits of the high school course. A number of the leading cities of the country have organized junior colleges. In the state of Missouri this movement for the organization of local opportunities for higher education has been promoted by the active interest of the state university. Kansas City has a junior college in addition to its high schools which give the regular four-year course. The general principle of supplying college education at public expense is clearly recognized in many free state institutions. It is much more economical for the individual when these higher opportunities are provided near his own home. It seems probable, therefore, from a study of the general movement throughout the country that St. Louis will offer more rather than less opportunities for higher education through the high school, the Harris Teachers College, and other institutions which are likely to grow out of the present school system.

It is much more difficult to decide how far the city of St. Louis is justified in developing its secondary education when this type of education turns out to be relatively to the numbers served so much more expensive than elementary education. We shall reserve comment on this matter until a later paragraph. At this point it is appropriate to call attention to one characteristic of the elementary schools of St. Louis which reduces very materially the expense of conducting these schools.

The key to the financial situation in the elementary schools of St. Louis is that these schools have very large groups of children under a single teacher. The report rendered by Superintendent Hartwell goes into this matter in great detail. St. Louis averages larger classes in the grades than the other cities of the class to which it belongs. Indeed, it may be doubted whether anywhere in the country there is a more crowded condition in elementary classes than in the city of St. Louis. The reduction which is ef-

fected in elementary school costs by crowding children into a single classroom is very great. Furthermore, St. Louis spends in teachers' salaries in the elementary schools only an average amount. Salaries being moderate and classes being very large, the net result is a cheap elementary school. It may be pointed out by way of digression that the heavy burden which is carried by elementary teachers could hardly be successfully borne if the housing conditions were not of the best type and if the central office did not supply assistance in the various special subjects, such as music, drawing, physical education, etc. There has been an effort in recent years to reduce the size of classes, but St. Louis still has before it a large and unsolved problem.

We may return after this comment on the elementary schools to the contrast between the elementary schools and the high schools. In the high schools there are a number of small classes, as is shown in the report by Mr. Meredith. There can be no doubt that these small classes are desirable from the point of view of an elaborate high school organization. The question seems to be, therefore, one of adjustment between a situation in the elementary schools which is not satisfactory and a situation in the high schools which is much more nearly what is called for in an adequately equipped school system. If St. Louis decides that it cannot furnish additional funds to the Board of Education, the high schools will undoubtedly be one of the first points of retrenchment. There is no possibility of large economies in the elementary schools.

If, on the other hand, the city gives funds for the further extension of educational opportunities, it will be very difficult to present arguments for the curtailment of the present high school equipment and courses. From the point of view of the student of education it is very desirable that the type of high school organization which St. Louis has, be maintained and even enlarged. There is a section of the city of St. Louis in the northwest which is in need at the pre-

sent time of high school facilities. The high schools are relatively late comers in the school organization of this as well as of other cities, but their rapid development in recent years shows that they are meeting in a very genuine way a popular demand for larger educational opportunity. The report on high schools rendered by Mr. Meredith urges an increase of flexibility in the courses and certain reorganization on the administrative side, but there is in that report and in the minds of all of the members of the survey staff nothing but enthusiasm for the excellent instruction which is given in the high schools and for the type of elaborate organization which it is hoped this report may tend to encourage rather than discourage.

In short, the attitude of the survey staff is very clear. The elementary schools of St. Louis ought to be given increased facilities for work. The high schools ought not to be curtailed. They ought to be extended in a number of directions and their work ought to be encouraged rather than limited.

Special Activities

In addition to the general provision for ordinary classroom work St. Louis has in recent years developed special schools for defectives, outdoor schools for children in need of special physical care, and a variety of activities for normal children which are recognized as extras from the point of view of the traditional school program.

Indeed, the criticism is heard in St. Louis, as in other educational centers, that money is being spent on fads and innovations which do not have the sanction of educational experience. This report will deal with every one of these innovations in detail. There is not one which the survey staff finds it possible to describe as unessential to a progressive school system. Readjustments there are which seem to the survey staff to be desirable but no large economies. In fact, many of the constructive suggestions which

are made entail larger expenditures than are now being made.

If there is one criticism of which St. Louis ought to be free, it is the criticism of rashness in adopting innovations. The course of study is at the present time being discussed very carefully by committees of principals and teachers. The reports of the various committees show a general realization that the course of study has been conservatively maintained. Many of the reports now in hand show that improvements must be made. In some cases these improvements call for increase in equipment. In every case they call for great intelligence on the part of teachers and administrative officers. St. Louis will doubtless in the future expand very materially the opportunities offered to the children of the city for a larger and more general education. There is no possibility in a rich American city of any permanent policy except the policy of educational expansion.

The Ability of St. Louis to Support Education

The foregoing paragraphs have defined the problem. The solution depends on the will and power to meet the situation. St. Louis has great resources which are not now drawn upon to support education. It can be shown and is shown in Dr. Rugg's report that St. Louis is abundantly able to give more support than is now being given to education.

In order to turn this economic ability into active support perhaps the argument should be presented in such a form as to make clear the dangers of further holding back of funds.

St. Louis can cut down on the support of high schools. This would mean that St. Louis would recede from a policy which in recent years has made the city one of the conspicuous examples of cosmopolitan high school education.

Again, St. Louis can build cheaper school buildings. If

this program is adopted, there is no escape from the possibility of building some kind of buildings. Already 6,000 pupils are housed in portables and there is danger that half-day sessions will have to be adopted.

Again, St. Louis can abandon special classes for defectives and those who are below physical normality. This would mean a regression in public hygiene that an enlightened citizenship would regard as a misfortune.

If these proposals for retrenchment are not accepted, there is but one other alternative; that is the provision of more funds.

The statement of the situation which has been made up to this point may not make clear the intimate relation between the cost of maintenance and the initial investment in buildings which is sure to be one of the issues in the minds of those who seek a solution of the school's financial promlems.

In one sense the erection of a school building can be thought of as a matter distinct from the teaching problem. But it is shortsighted to divorce building policy from educational policy. The fact is that a school building is in a very important sense of the word a concrete embodiment of the whole school policy. When one thinks of a school building, therefore, he must think of it in terms of the plans which the school administration has for the use of this building. For example, if a school building contains a gymnasium and a swimming pool, it is perfectly evident that the administrative officers who put the gymnasium and the swimming pool into the building contemplate using it as a part of the regular educational equipment. They will by their policy of construction be called upon immediately to provide the time and instruction necessary to use this material equipment. The moment they begin to try to provide time for the use of the swimming pool they will raise a number of questions with regard to the relative importance of swimming as contrasted with arithmetic and

reading. The swimming pool, therefore, comes to be a part of every consideration of the course of study. What has been said with regard to the swimming pool could be said with regard to all of the other characteristics of the building.

This report has from time to time commented on the size of elementary classes in the St. Louis schools. Here again we see the relation between building and school policy. Many of the classrooms in the newer elementary schools are equipped with fifty-four desks. The desk itself has been made smaller than the desk which is used in many city systems for the purpose of putting many such desks into each classroom. Here again is an educational as well as an economic policy which expresses itself in the building. If one says of St. Louis that there has been a tendency to gradually reduce the number of children in each of the elementary classrooms, he must recognize the fact that such a comment has its bearings on both the educational aspects of the system and on the construction of the buildings.

It is unnecessary to go further in detailed illustration of the general statement that a school building and a school policy are very closely related to each other. Whenever financial difficulties arise these difficulties are likely to express themselves most obviously on the material side. The school system becomes aware of lack of proper building equipments long before the citizens in general become aware of the fact that the course of study and the general policy of the school system are being invaded. It is inevitable, of course, if there is a lack of funds, that the school organization will ultimately be cramped because of this inability to enlarge the work of the schools. But the ordinary citizen is not likely to realize that the lack of funds means a reduction in the richness of the course of study and a deterioration of instruction. The ordinary citizen sees clearly the absence or presence of a building. He is likely to contrast the building with the building in which he himself at-

tended school and again he himself fails to realize that this building exemplifies in its structural characteristics the change which has been going on in the course of study and the methods of teaching.

The school system ought to be more aggressive in persuading the older generation that the course of study has been modified as much as the hygienic conditions in school rooms. The drinking fountain is much more hygienic than the old-fashioned dipper and pail that used to be used in the country school, but the geography has changed in its content and in its method of instruction quite as radically as the water supply in the school building. The lighting of the old-fashioned school building was about as bad as it could be. The windows were narrow and badly distributed. The lighting of a modern school room is worked out on definite scientific plans. The ordinary citizen can be shown the importance of this change, but he is very likely to overlook the fact that the methods of teaching primary reading have been worked out with exactly the same deference to scientific principles that is exhibited in the lighting system.

Just as the new building costs more than did the old building, so the requirement for superior teaching entails on the instructional side a very much greater cost for the conduct of schools. In this respect the school is not unique among the institutions of modern life. Everywhere the cost of producing the best conditions of living is recognized as increasing with the growing wealth of the nation. The purpose of the present discussion is to emphasize the fact that such an increase in cost is legitimate in just the degree in which a community is prepared to offer to its children some share in the larger opportunities which society as a whole enjoys. One can curtail these opportunities, but he should recognize clearly the fact that if he curtails the opportunities at any one point he will affect the life of a whole system. He may modify the building if he will, but in that case he will affect directly the course of study.

Permanency of School Buildings

There is one further discussion which is of great importance in determining the future policy of the city with regard to school buildings. The experience of recent years with regard to school buildings is in some respects discouraging when one thinks of the rapidity with which these buildings drop behind the newer requirements for hygiene and for accommodation of the subjects which are added to the course of study. Buildings which were erected in 1870 can be used, as some of them are now being used, for school purposes, but the objections to these older buildings are numerous and indicate that the construction of school buildings was at that time very little understood.

The situation is somewhat changed, however, from that early date. In the first place, the hygienic considerations which must be kept in mind are now thoroughly understood. A building must be well lighted; it must have proper sanitary arrangements; it must be fireproof; and it must have certain equipments for heating and ventilation that provide for a large amount of fresh air for the children who have to live in these buildings. Furthermore, the flexibility of the school problem is in a measure provided for by preparing rooms that can be utilized for a variety of different purposes. Each of the rooms put into a modern school building is sufficiently complete in its hygienic characteristics so that forms of activity not originally contemplated can be accommodated in these rooms. When all of these considerations are taken into account the probabilities are that a school building constructed at the present time will be useful much longer than buildings that were constructed in the latter part of the last century.

There should, however, be the most careful consideration of plans with a view to making school buildings flexible. It should be possible as the course of study develops

to introduce the changes in the building which will be necessary to fit the new requirements. Thus Mr. Ehler in his report on physical education has called attention to the desirability of a different type of construction to meet the demands for a type of physical training different from that which is now given in the schools. The probabilities are that the handwork which is carried on in the elementary schools will increase as the course of study in the elementary schools is extended. More work in home economics is likely to be offered, especially to the older girls.

These intimations of the kinds of changes that will be made in school buildings in the future illustrate still more fully the contention of earlier paragraphs in this report that the building problem and the course of study should be worked out together. Indeed, a farsighted policy will require that the future of the school system arrange its physical equipment for a long enough period so that the cost of permanent equipment will be reduced to a minimum not by reducing the amount of equipment but by its wise selection.

Putting the matter in another way, it should be pointed out that a wise policy of construction will make it possible to have many facilities that a temporizing policy will not permit. Up to this time the school system of St. Louis has erected its buildings more with reference to present available resources. The fact that in some decades many buildings were put up while in other decades very few shows that the building policy has been conceived in short periods. The time has come to look into the future and plan expenditures with a view to future needs and future resources. If it is true, as indicated above, that school buildings represent a legitimate investment for half a century, it is equally legitimate to organize the financial policy on the same scale.

Problems Not Primarily Financial

The summary up to this point has aimed to deal directly with the financial questions which were uppermost in the minds of the Board of Education when they organized the survey. A number of problems that are not primarily financial but have to do with organization and instruction have absorbed a large part of the energy of the survey staff. These attach themselves to the foregoing financial discussions because, as has been repeatedly stated, any phase of the school policy is indirectly related to the problem of public support for the schools. We may turn, therefore, from the treatment of financial questions to the discussion of each of the major divisions of the report. The summary from this point on will serve also as a review of the longer special reports which follow and as an outline of the activities of the whole survey.

I. General Organization

St. Louis has a unique charter under which the Board of Education operates. The duties of all of the major officers of the system are clearly defined. Superintendent H. C. Morrison has prepared a report on the general administration of the system and commends it highly. He points out the possibility of danger in the distribution of functions among various heads of departments, but notes that in practical operation the tendencies toward disintegration which might appear are as a matter of fact avoided. He has examined the records of the Board and of the various central offices and reports favorably on the workings of the organization.

In this connection certain items from Dr. Rugg's report may be cited as showing that the dangers pointed out by Mr. Morrison are not all avoided in the actual operations of the system. There are duplications in the bookkeeping of the business office for which there is no evident justification. In one recent case such a duplication can be traced to the trans-

fer of a clerk from one division to another. These matters are trivial from one point of view but they contain possibilities of disorganization which should be removed.

Indeed, the survey staff has reached the judgment that one of the strongest forces making for unity in the St. Louis system is the personality and the constant general supervision of the whole system exercised by the Superintendent. The office of superintendent is the central office in the whole organization. The time may come when it will be more necessary than now to insist that this fact be formally recognized. At present the preponderance of the Superintendent's influence is evident far beyond the formal recognition which the fact receives in the rules of the Board or in the charter.

II. Schools

A. ELEMENTARY SCHOOLS

1. General

a. Reports on Promotion

St. Louis divides its course of study in the elementary school into periods of ten weeks. The promotions at the end of each such period have been reported in full. The highest percentages of non-promotion appear in the first, fourth and seventh grades. In many of the grades the individual promotions by two quarters equal the non-promotions. The percentage of non-promotions is low as compared with other systems.

While the situation is satisfactory in the system as a whole, a careful study of individual buildings shows that there is a great lack of standardization of practice. Some schools depart so radically from the system as a whole as to suggest the necessity of a complete change in attitude and

practice on their part. The study of this matter suggests a very useful check on the principals who are in control of the matter of promotions.

b. Observations

Mr. Mirick attended a large number of class exercises in the elementary schools. He has given a detailed account of his observations. This account is very discriminating and reports that in general the instruction in the elementary schools is of a high grade. Mr. Mirick points out that the work in the primary grades is more satisfactorily worked out than is the work in the grammar grades. He gives detailed examples. He finds that the teachers who come into the system from the Harris Teachers College are very well trained and are very successful. He is enthusiastic in his commendations of the organization which he found in the schools.

c. Course of Study

The course of study in the elementary schools is conservative. There are still many relics of earlier methods of instruction. There are many new subjects such as manual training which are incorporated into the course only in a very loose fashion.

As pointed out above, there is a revision now under way. There seems to be some anticipation of the revision and many schools have greatly profited by the discussions. On the other hand, there is in some quarters an unwarranted complacence with present practices on the ground that no changes are necessary until all are ready to be made.

It is the judgment of the survey staff, as reflected in detail in Professor Bobbitt's report, that the revision of the course should be pushed to its consummation at the earliest possible moment. It is the judgment of the staff that the course could with great advantage to the children be expanded without sacrificing the virtues now possessed.

2. Reading

The most fundamental subject of instruction in the elementary schools is reading. In the early years, instruction aims to give the pupils such command of the formal elements of reading that they will be able to master the printed page. In the later years of the school, reading is the instrument for the acquisition of all of the subject-matter which the child studies.

Dr. William S. Gray, with the aid of twenty substitute teachers, made a series of tests which differentiate sharply between oral reading and silent reading. The results of these tests are supplemented and supported by visits made in eighty reading recitations. In general, instruction in reading in the St. Louis schools is very efficient. Especially conspicuous is the power shown by the pupils to understand and interpret what they have read. There is need of greater emphasis upon silent reading in the upper grades, and there is need of more definite testing of results in order to check up the work of individual classes and individual schools.

The example set in this part of the study emphasizes the value of supervision through tests. Whatever observations may be made by school supervisors, it would be advantageous to secure from all of the children at stated intervals the kind of results that would make it possible to carry on supervision on a purely objective basis rather than merely on the basis of the personal judgments of the supervisors.

3. Arithmetic

A standard test in arithmetic was given by the principals of a number of the elementary schools. These tests make it clear that in the fundamental operations the schools of St. Louis are training the children in superior fashion. They also serve to emphasize the necessity of analyzing in-

struction in arithmetic so as to bring out the complexities of the subject and the differences in the mental processes which are cultivated by each of the different arithmetical operations. It is a mistake to assume, for example, that addition is a single process in all of its different applications. The fact is that addition and all of the other arithmetical operations are among the most complex subjects in the course of study. Children have a great deal of difficulty with arithmetic because teachers do not understand the special difficulties which are encountered by individual children at different stages of their training. The tests in arithmetic suggest further studies that would help clear up some of these difficulties.

4. Penmanship

Professor Frank N. Freeman secured specimens of handwriting from a number of the elementary schools. These specimens were graded with reference to both speed and quality. In point of speed the St. Louis schools are superior throughout. Indeed, there is some evidence in the results that speed has been standardized beyond quality. There is a reciprocal relation between speed and quality and the results suggest the necessity of scrutinizing somewhat more carefully the qualitative results secured at different levels. As contrasted with other cities that have been investigated by similar methods, the quality of handwriting in the lower grades of St. Louis is not high. The method of instruction employed in the St. Louis schools is such that the school officers are undoubtedly prepared to face this fact with perfect complacence. Some systems undoubtedly over-emphasize quality in the lower grades. In the upper grades St. Louis reaches the average and even surpasses the average in quality.

Professor Freeman takes up the problem of supervision of handwriting. Supervision through a special corps of

instructors originated some years ago when the handwriting in St. Louis schools was poor. This system of supervision has been carried on and perfected with the result that the handwriting is, as indicated above, superior. The problem of continuing the supervisory staff in full force is at once a problem of finance and a problem of educational organization. The amount of money which could be saved by discontinuing supervision would be small. The reference of all matters relating to handwriting to the principals rather than to a special corps of supervisors has been suggested and has certain advantages. Undoubtedly some principals are sufficiently interested in penmanship to supervise it adequately. It is equally certain that some principals are not competent to supervise writing. St. Louis is following the safest method and the surest method of securing good handwriting. If all of the principals were checked up by objective tests, it might be possible to reduce the supervisory staff and yet secure excellent results through the stimulus that these objective tests would furnish for the individual principals.

B. SPECIAL SCHOOLS

Professor W. F. Dearborn of Harvard University, a specialist in the diagnosis of mental defects in children, visited all of the special schools and many of the ungraded classes. He calls attention to the necessity of distinguishing somewhat more clearly the functions of these special classes. He points out the distinct advantages to the system of a segregation of abnormal children and favors the extension of the schools for such children.

The present system of selecting these children does not seem to be adequate. There is doubtless here a general social problem as well as an educational problem. Parents are so intimately concerned in the segregation of such chil-

dren that a campaign of general education is necessary in order to make the community realize the value of such classes.

C. HIGH SCHOOLS

The report on the high school calls attention to the fact that St. Louis has in its cosmopolitan schools one of the most elaborate forms of high school organization. The growth of high schools in St. Louis has been very rapid in recent years and it has been possible because of the relative newness of the whole scheme to work out rapidly the enlargements which in an older system would have come more slowly.

While provision for a variety of courses has been made on a most generous scale, the access granted to individual students has been in a measure restricted by the limitations which have been imposed upon their election of courses. There is a fundamental problem here involved. Either the student's whole curriculum may be considered as a unit, or the various courses which enter into this curriculum may be regarded as the unit. If the curriculum as a whole is thought of as a unit, there will be some difficulty in opening up the opportunities of the whole school to individual students. On the other hand, if the individual courses constitute the units, there is danger that the student will not secure a systematic and well ordered sequence. St. Louis has adopted quite consciously the formula of organizing the student's whole curriculum as a unit. Mr. Meredith in preparing the high school report comes back again and again to the other view and emphasizes the importance of giving elective opportunities very freely to individual students. The antithesis between these two views being thus set forth, it is not the function of the survey to attempt a decision. The influence of the survey is undoubtedly to be recognized as cast in the direction of a very much more

liberal treatment of elective opportunities than exists at the present time.

In point of organization the high schools are described as thoroughly organized and as operating with the largest degree of internal harmony. There is, however, among the members of the faculties a conformity to type which Mr. Meredith regards as unfortunate. He recommends that individual members of the faculties be encouraged to try experiments even if these depart very radically from the common practice. Here again it is fair to point out that the unity of the school system would suffer by the acceptance of this recommendation. It is the attitude of the members of the survey staff, however, that with proper supervisory checks and proper organization of departments in the high school the danger of disorganization would be reduced to a minimum.

Mr. Meredith regards the equipment of the high schools as unnecessarily extensive. He also regards the courses of study as unusually heavy. With regard to the equipment it may be said that the financial issues involved are relatively slight. Whatever equipment is put into the schools is used over a period of years. Especially one recognizes the economy in human energy which is effected through generous equipment, it is doubtful whether the schools are open to severe criticism for their present equipment. The financial survey shows that the financial considerations here involved are not important. There is an educational issue which is perhaps more significant. If courses can be carried on with simpler apparatus and be equally effective in training the students, there is some advantage to be gained from the simplicity of the exercises.

So far as the amount of work required of the students is concerned, the St. Louis system recognizes the general principle that young people of high school age if they went into business would be called upon to work for long periods and

at a high tension. Preparation for the practical emergencies of life is thought of by the school officers as justifying a heavy course of training in the high schools. Mr. Meredith's contention that a smaller amount of work done at a higher level would be educationally more advantageous is interesting and suggests an important and complex problem. The difficulty is that a reduction in quantity does not automatically insure the higher level of work. It may be suggested that high school organization will undoubtedly be modified in the future in such a way as to provide for some recognition of high quality of work, but at the present time the difficulty of recognizing proper quality is so great that it is at least difficult to substitute pure quality for quantity.

Mr. Meredith has reported in detail on numerous observations which he made in the classrooms. He found the instruction to be superior and, on the whole, well organized. He suggests many innovations which might be tried by way of modifying the present courses.

III. Administration

A. SUPERVISORY ORGANIZATION

St. Louis has a type of supervisory organization under which three special subjects, music, drawing and physical education, are supervised by a group of specialists. The members of the survey staff who examined these subjects are in favor of special supervision and instruction in each of these subjects. Drawing is reported by Mr. F. H. Daniels, supervisor of drawing in the public schools of Newton, Massachusetts; physical education by Professor Ehler of the University of Wisconsin; and music by Mr. J. B. Cragun of the School of Education of the University of Chicago.

The statement that special supervision is regarded as necessary by each of these specialists disposes, so far as the survey is concerned, of the financial problem here involved. It has been suggested by some of the members of the Board of Education that the supervisory officers in each of these lines should be dispensed with. By way of answer, attention is drawn by the survey to the fact that it is quite impossible for elementary teachers to excel in all lines. There is such a variety of instruction in the elementary schools that the teacher is likely to be distracted. Her own limitations prevent her from taking a complete interest in arithmetic, reading, and other academic subjects while at the same time she tries to become a specialist in drawing, music and the other special lines. At all events, even if her enthusiasm covers all of these subjects, she must have periodic help in organizing the work and in supervising its quality. Nor are the principals of the schools qualified to supervise these special subjects with equal efficiency. In some cases doubtless the principals could give assistance in one or the other of the special subjects, but in general it is not safe to expect them to cover all of them.

There is another method of dealing with this difficult problem. It is a method that has been adopted in many of the school systems. It is the method of departmentalizing the school. When a teacher is especially interested in music, a school may very advantageously consider allowing her to devote her chief time and attention to instruction in music. As she circulates through the building and gives the classes their special training in music, the place that she would be filling in reading or arithmetic can be occupied by some teacher who will be greatly relieved to give up music and take one of the ordinary academic subjects.

There are in the country a number of experiments of far-reaching importance which are now going on in the way of departmentalizing grade work. It cannot be said that there

is general agreement with regard to the advantage of departmentalization. The disadvantages are the loss of interrelation between the subjects, which interrelation is more readily secured when a single teacher goes through all of the exercises with a given class. On the other hand, there are many who are very enthusiastic about the advantages of departmental work because of the possibilities of specializing training and specializing equipment.

St. Louis has a number of schools that are experimenting with departmental training. The duty of the survey is performed when attention is drawn to the various possibilities and to the need of further study of these possibilities. Whatever readjustments are made in the school system of St. Louis, it is perfectly clear that there would be no radical economy at this point.

It is interesting to note in connection with the three reports that deal with music, drawing, and physical education, that there is less standardization of these subjects and more of a disposition to recommend changes than in any of the traditional subjects which have been canvassed above. One cannot escape the conviction that it is extraordinarily difficult for a survey to cope with the complex problems that arise in connection with these special lines of teaching. It must frankly be admitted that possibly the recommendations of the surveyors represent a theory of training which is different from that defended by the supervisors in the St. Louis system. The criticisms and recommendations are, however, offered with the clear conviction that they serve a useful purpose in stimulating thought about these problems. It is to be hoped that the criticisms will not alienate the respective groups of officers to such an extent as to defeat this more fundamental purpose. Even if the suggestions of these specialists are not adopted, they ought to be considered.

B. DIVISIONS OF ADMINISTRATION

1. Child Accounting

The attendance department was examined by Superintendent Morrison. He found the field work of the staff satisfactory. He points out the desirability of a better state law on child labor but states that the street trades and the general situation seem to be well in hand so far as the public schools are concerned. The condition is less satisfactory in the private schools. Superintendent Morrison recommends a more frequent school census of the city. In order that the school system may have a full accounting of all of the children he recommends certain changes in the office records and in the method of recording attendance.

A recommendation was made in an earlier paragraph that the school system institute a cumulative card record of each child going through the schools. The importance of such a record is pointed out by Superintendent Morrison. If such a record were at hand, many of the problems which now confront the attendance department would be more clearly recognized in their educational aspects and the educational activities of the system would be more closely articulated with the activities of the attendance department.

2. The Hygiene Department

The hygiene department was surveyed by Dr. Peterson. He points out in detail the reasons why there must be a special department of health for the schools, separate from the city health department. He then gives reasons for expanding the work of the department and for more effective measures in dealing directly in the schools with minor difficulties.

C. THE APPOINTMENT OF TEACHERS AND TEACHER TRAINING

The appointment of teachers is in professional hands in St. Louis. The forms of political interference which appear in many cities are absent here. Furthermore, the city is provided in the Harris Teachers College with an agency which trains its new teachers and gives to the teachers in service continuous opportunity to keep intellectually alive.

The second part of the report on teachers is drawn from the tables which will be published by the Carnegie Foundation as part of a general survey of the teachers of the state of Missouri. It is shown that teachers in very large numbers are carrying the economic burden of supporting families and in some cases are engaged in outside activities in order to supplement their incomes. In the main the training of these teachers is of a high order. A very large part of the teaching body is native to St. Louis. This last statement would be a criticism if it were not offset by the vigorous activity of the Harris Teachers College in providing training that prevents the evils which would arise from inbreeding.

IV. Buildings

A. CONSTRUCTION

The architectural characteristics of St. Louis school buildings were canvassed by Mr. McCornack of Cleveland. He finds the new type of building very substantial and very satisfactory in most respects. He suggests the addition of certain features and points out economies in certain minor matters. He recommends a different use of the lots in certain cases, and like a number of the other members of the survey staff, criticises the brick pavements in the yards. The most important recommendation which he makes is

that the buildings be planned with a fundamental structural unit which will make it possible to make easy structural adaptations to future developments.

In the course of his discussion Mr. McCornack has made it clear that there is the most intimate relationship between building plans and educational organization.

B. HYGIENE

Professor F. B. Dresslar of Nashville, Tennessee, a specialist on school buildings in the Bureau of Education of the United States, has prepared a report on the hygienic conditions in the building; that is, he deals with lighting, heating, seating, sanitary fixtures, etc. He finds that the new buildings are of a very high grade of excellence in the matter of hygienic conditions. The older buildings are, of course, open to criticism. Mr. Dresslar calls attention very emphatically to the effect upon the community of buildings of the new type which have been erected in the city.

C. USE OF BUILDINGS FOR CLASSES

St. Louis has more children in its elementary classes than any of the other large cities. The average as reported by the Superintendent of schools is 43 children in each elementary room. A better way of exhibiting the facts is to present a full table showing the number of classrooms containing classes of various sizes. This table is given by Superintendent S. O. Hartwell of Muskegon, Michigan. Mr. Hartwell has dealt very successfully in the school system under his own supervision with the problem of putting children together in elementary classrooms. After discussing the possibilities of making readjustments in the elementary schools of St. Louis, he emphasizes the imperative necessity of increasing accommodations in the St. Louis schools. He supports his contention further by pointing out the fact that about 6,000 of the school children of St. Louis are at

the present time housed in portable buildings. The city is behind in its building program. Mr. Hartwell also emphasizes throughout the report the importance of recognizing the intimate relation between the building accommodations and the success of school organization.

V. Finance

Dr. H. O. Rugg has made an exhaustive study of the finances of the St. Louis system and of the business organization. In this he had the advantage of a review of his plans by Dr. L. P. Ayres of the Russell Sage Foundation and by Superintendent Morrison. There were no radical modifications in the plans, however, resulting from this review and the credit for the work belongs to Dr. Rugg. He was assisted by Mr. P. S. Kingsbury, who received his training with Dr. Rugg.

This section of the survey has been taken up very fully in the introductory paragraphs of this summary. It remains at this point to add several comments on the general problem of the relation of finance to the operations of the instructional department.

Everywhere in the country there is a tendency to draw a sharp line of distinction between the financial side of the school system and the instructional side. Members of the Board of Education who are for the most part business men conceive of the school as in part a business organization and in part something else. The something else is usually rather vague in their minds. Whether the school is "delivering the goods" they do not know. It usually does not occur to them that they ought to be quite as insistent on a true balance of the books on the instructional side as on the financial side. Finances seem definite while instruction seems uncertain and purely a matter of qualitative ideals.

In the effort to break down this distinction it must be insisted that instruction can be evaluated. This whole report has exhibited the methods and outcome of a scientific study of instruction. The Board of Education ought to be urged to increase the energies of the instructional department so that it can in the future more than in the past develop this type of evaluation of results.

In the second place, it ought to require very little argument to show that finance and instruction are absolutely interdependent in the sense that expenditures are justified only because the community needs the services of the instruction department. The instruction department is the real and only center of the system. It has been pointed out in Dr. Rugg's report that the business offices have in some measure gone beyond the instructional offices in such matters as clerk hire and increasing cost of operation. In some measure the increase in business expenses is undoubtedly justified. But business organization can never do the real work of the schools. The schools are teaching institutions. The budget can be managed scientifically only when managed by and for the instruction department.

The foregoing paragraphs give a general summary of the reports that have been contributed by the various specialists. It remains to comment on several general matters not otherwise covered in the reports.

Transportation of Pupils

One item of expense the legality of which has been seriously questioned by members of the Board of Education is the payment of carfare by the Board of certain pupils who have to attend school so far away from their homes that they must ride on the street car. There are a number of considerations that have led the Board of Education to the practice of paying carfare.

These payments are made to children in upper grades who are obliged to go long distances because they live near schools which are too small to accommodate upper grades; to colored children who cannot be provided for otherwise except by a wider distribution of small colored schools; and to children who attend special classes.

In each of these cases the Board faces the alternative of providing more schools or consolidating the schools and transporting the children. The experience of the country at large supports the Board in adopting the present policy. Consolidation is always accompanied by the necessity of providing transportation. The action of the Board in this matter is undoubtedly wise. No other single device would so readily meet the complex situation which faces the Board and there can be no doubt at all that the policy ought to be continued under the safeguards which are now provided.

The Educational Museum

The museum has been a subject of some criticism. The survey staff was therefore asked to visit the museum and to discuss the cost of this adjunct to instruction.

The museum furnishes concrete material which supplements the verbal instruction given in the schools. There can be no doubt at all that it is advantageous for instruction that material of this type should be at hand. Whatever gives the pupils a definite and concrete notion with which to interpret their reading and about which they may think whenever they are trying to reason, will improve very greatly their knowledge and their modes of thought. One of the largest general movements in modern education is the movement in the direction of concreteness in the experience offered in the schools.

If this general and fundamental principle is recognized, the practical question which confronts the school system is

the question of providing concrete material in sufficient quantities to serve the purposes of a great city.

There is another method of furnishing concrete material for instruction which might be adopted rather than the method of equipping a museum. Collections of concrete material might be made in each school building. The difficulties which would arise in this case are, however, numerous. In the first place, it is very difficult indeed to get certain types of material. The St. Louis museum is fortunate in the fact that it has inherited from a number of expositions rare collections of material which could not be duplicated under any circumstances for all the buildings of the system. In this respect, then, the museum has the very decided advantage over any other form of organization that would supply concrete material for the classroom.

The second difficulty that would be encountered in providing material for the various school buildings is the difficulty of keeping this material in proper form so that it will not deteriorate. It would have to be stored in some way or other, either in cases in the corridors or in cases in the various recitation rooms. If stored in either of these ways, it would still have to be taken to the various classrooms within the building, and it would have to be watched in some instances to protect it from deterioration, so that a certain amount of energy would have to be given in the various school buildings to the handling and care of the specimens. If this obligation to take care of the specimens were distributed all over the city, it would indeed be less apparent and its cost would not be readily distinguished from the general cost of instruction and management of the buildings; but the handling of the material would nevertheless cost the school system a good deal of money. If the teachers were called upon to furnish the extra energy needed for the care of these specimens, they would, of course, withdraw a corresponding amount of energy from

some of the other activities to which they now devote themselves. There would be then a withdrawal of necessary energy from certain types of instruction and this extra energy would go to the care of the specimens. By centralizing all of this care of specimens the school centralizes also the expense and the expense becomes obvious. It would be fair to divide the expense by the total number of children that are served. In that case the total cost of the museum would be seen to be slight and the economy to the system as a whole would become apparent when it is remembered that the classrooms are securing the advantage of a well regulated storage system where the articles are not allowed to deteriorate or be lost because they are constantly inventoried and repaired by a well organized central corps of officers.

Incidentally one of the expenses that arises through this centralizing of the care of the specimens is the cost of transportation. Taken again in the aggregate, the cost of transportation is very considerable, but it has long been recognized as a fundamental principle of public economy that transportation—as in the case of books, for example—is the cheapest method of making material accessible to a large number of people. The public library has found it advantageous to develop distributing devices. The museum is nothing but the extension of the library idea to a body of concrete material which ought to go into the classrooms and be made as accessible as it can be for purposes of instruction.

It is the judgment of the survey staff that the museum is serving its purpose in a very large and important way. Some effort was made to compute the cost of different items of service, but the system is so complicated that this does not seem possible. The question has also been raised whether the scale of salaries maintained in the museum is equitable. It is the judgment of the survey staff that the salaries are not excessive. The work is carefully and systematically

carried on. This requires a high grade of ability and it would be false economy to attempt to conduct the museum on any other than a strictly educational level.

Social Centers

It has been suggested both within the Board of Education and by interested citizens that school buildings in St. Louis should be made active centers for social work in the communities in which they are situated. The movement for social center work throughout the country has been very vigorously promoted in recent years by a number of different agencies. In many cases this campaign has been carried on with much enthusiasm but little definiteness of plan or little clearness as to the relation of the school organization to the social activities of the community. It may be well, therefore, to comment briefly on the general principles that are here involved before making any statement with regard to the attitude of the Board of Education in the city of St. Louis.

It is not the business of the school as a public agency to take in hand all of the social activities which adults in the community need for their recreation or improvement. In other words, the school has as its primary function the care and education of the children. Wherever a choice must be made between this function and the function of caring for the older members of the community, preference must be given to the children and their needs. This principle makes clear a distinction of first importance. The use of a school building and the promotion of its use are two wholly different matters. It may be held with the most unlimited enthusiasm that a school building should be used by adults and yet it may be contended with equal vigor that the school authorities are not the best agencies for organizing social center work. On the other hand, the school authorities are obligated to take full charge of the use of school

buildings by children. The educational work for children is in its totality the first and foremost duty of school officers.

In the second place, it would be of very little advantage to a community to have social activity imposed upon it from outside. If the school should undertake to go to a community and persuade that community to take up social activities of various types, there might be a very large waste of energy. Indeed, it is conceivable that the community would react unfavorably to a proposal of this sort; whereas, if the members of the community themselves are aroused to a recognition of their social needs, they would develop spontaneously forms of organization that would be very wholesome. The relation of the school to the problem should be the relation of an agency that is prepared to aid and co-operate with the community. It ought not to be the agency that organizes the community, especially if in the attempt to organize the community energy is consumed which is needed for the training of children.

Third, the assumption that the school is the best place in which to carry on social center work is by no means justified in many cases. Schools have furniture which is built for little children, and in many cases adult audiences find themselves very badly provided for in the school from the mere point of view of comfort. Where there is no assembly hall or club building in the neighborhood, the school may with propriety be requisitioned, but in many cases it would be quite as convenient, less expensive, and more comfortable to use a building designed for the meeting of adults.

All this discussion with regard to participation by the school in social activities is especially appropriate in a city where the funds for the conduct of the schools are seriously in question. There can be no doubt at all that there is a need in American cities for more association and organization of members of all communities. But it is the experi-

ence of school systems that have worked on this problem that it is better to differentiate clearly between social center work and ordinary school work. It is better to develop adult social activities only so rapidly as the community itself becomes conscious of its needs and participates in the organizations that shall satisfy these needs. It would seem entirely appropriate for the city of St. Louis to delegate to its school officers the function of organizing social activities, but it does not seem appropriate to refer to the school officers in a vague and indefinite way the demand that communities be organized and that the schools supply the energy and the places for this organization out of present resources. The resources ought to be increased and a certain definite amount of energy ought to be set aside for the development of social work. Until the community realizes this need and is willing to supply it, the school ought not to be held responsible for the development of social center work.

This position can be emphasized by reference to the matter of assembly halls as parts of school buildings. If assembly halls are to be built, they should be placed for purposes of economy in construction outside the main structure, at least in elementary schools. If the community wants assembly halls, it should recognize that they are additional, special items in the building program.

It is the policy of the Board of Education at the present time to co-operate as fully as possible with any community that is moving in the direction of social organization. The Board of Education has attempted to draw a sharp distinction between its primary functions, which are educational and relate to the children, and its secondary functions, which relate to the recreation and entertainment and education of the adults of the community. Recreation of adults is not a primary function of the school. Recreation for children is an important part of the course of study, and it

has been the purpose of this report to promote as fully as possible the interest of that phase of school work. The officers of the survey find no ground whatsoever for criticism of the Board of Education for failing to participate in social center work. On the contrary, there is frequent use of the school buildings in all those communities where the community itself is willing to take the initiative in such organization. In conferences with the officers of the Board the survey staff has found the largest sympathy for social work, but a clear recognition on the part of the school officers of the necessity of distinguishing between this demand and the primary demands of the school.

Many citizens fail to recognize that the daily routine of providing instruction for 80,000 pupils requires enormous energy and involves great expense. Passing all too lightly over the fact that such instruction must be provided every day, some ambitious members of the community who are conscious of the need of agencies which will take care of the less well defined demand for adult education, think of turning the schools into this channel. The fact is that the school has in recent years been bearing a larger and larger part of the community's burden, while at the same time the support of the school has not been increased in equal proportion. Again it should be stated that it is entirely legitimate for the community to organize in a large way all sorts of social activities, but with such a demand there should come a clear appreciation of the necessity of equipping the agencies that are to meet this demand.

Night Schools

The survey was conducted at a time in the year when it was not possible to observe the work of the night schools. The records of this work were looked into, however, and the survey staff recommends its continuance and enlargement. There can be no doubt that the demands for educa-

tional opportunities in a great commercial and manufacturing city have long since passed the point where they can be met by giving little children or even high school youths the regular courses traditionally offered in these schools. Adults who have not had the full opportunities of an education or who by virtue of the changes in modern life find themselves in need of new types of training must be allowed to share in the educational opportunities which the school system can offer. The use of the buildings in the evening is a genuine public economy.

One fact must, however, be kept clearly in mind. The work for adults must not curtail the opportunities offered to children. The school system cannot justify the expenditure of funds on night school if this jeopardizes day school. The problem can be put squarely to the public. Night school is an extra expense and requires its own support.

Summer Schools

When the Board of Education closed the summer schools in 1915 because of lack of funds there was a popular protest which gave clear evidence that the city needs what is now being given in the way of summer instruction. Indeed, there is every possible ground for asking for an enlargement of summer work.

The present situation in regard to vacations in American schools is the historical survival of that earlier and more primitive state when schooling was supposed to be adequate if it fitted itself into the few useless weeks or months in the winter when the pupils could not profitably be employed around the home or safely run wild. Step by step the American school has increased the length of the session until now it fills in most flourishing cities somewhat less than two hundred days in the year. European schools do not lose as much time as American schools, being in session from twenty to thirty per cent longer each year.

There can be no doubt that the school year will be extended. Especially is it important in cities where a very large part of the population cannot go away for extended vacations that there should be suitable provision for the supervision of the life of the children. Progressive cities everywhere are taking up the problem of providing for their children in the summer.

Several members of the survey staff visited one or another of the summer centers and it is recommended unqualifiedly that the summer work be enlarged.

Industrial Education

This survey did not take up the problem of industrial education. As pointed out in earlier paragraphs, the course of study in St. Louis schools is conservative. Traditional subjects are taught with exceptional success. Innovations are introduced cautiously after long and complete discussion. The result of this attitude is that there has been very little by way of industrial training taken into the course. The high schools have strong commercial courses and domestic science courses and strong courses in the general manual arts.

Furthermore, it is the policy of the St. Louis system to provide in the high schools, classes in technical subjects whenever the demand is expressed by any group of prospective pupils requiring such courses. For example, in the day schools courses were introduced in the Central High School for printers' apprentices and in the Sumner High School for training chauffeurs and automobile mechanicians. In the evening schools there are classes for mechanics in various trades such as wagonmaking, electroplating, printing, etc.

This policy is adopted because it is believed that trade schools which do not grow out of the demands of real industry are likely to be very limited in scope and artificial

in their courses. The school authorities accordingly meet a demand which is strong enough to make itself felt in the practical world and thus secure, they believe, a type of students and a type of work which guarantee genuine trade education.

The question which is raised by this report goes back to the demand for trade training. Very often the need for such training exists but is not intelligently expressed and not even recognized by the practical workers in the trades. There is need of the wisest guidance for the community. There should be a careful study of industrial conditions with a view to discovering where education will improve trade workers and elevate trade.

To this end it is recommended that industrial education be made a subject of special study. An informing body of facts has been collected in three of the cities of the United States as a result of surveys of the educational problems related to industry. These cities are Richmond, Virginia; Minneapolis, Minnesota, and Cleveland, Ohio. A study of the industries of St. Louis from the same general point of view would doubtless influence the present work of the schools and would furnish the basis for future organization of educational opportunities of a new type.

It is recommended that St. Louis undertake a general study of the problems of industrial education based on a full educational survey of the industries of the city.

Supervision Through Scientific Studies

One special enlargement of the instruction department which is recommended relates itself so closely to the general methods and purposes of this survey that it is appropriate to devote a section of the general summary to the arguments in favor of this enlargement. It is recommended that additional energy be provided for the scientific study of

school results through a tabulation of records and the conduct of tests.

Supervision of a relatively impersonal type, employing methods of comparison and tabulation of results, is an important adjunct to the type of personal supervision which has been traditional in American schools.

As a very impressive example of the type of study which supplies this need, reference may be made to the study completed last year by Assistant Superintendent Bryan on the marking system and number of failures in all of the departments in all of the high schools. This study brings to the high schools in a wholly impersonal and factual way a body of information which cannot fail to improve practice very profoundly.

It is a plea for more studies of this type which is represented by this paragraph.

Some cities have added to the staff of the superintendent's office a single efficiency expert or a bureau of research. Better, in the judgment of the writer, is the enlargement of the instruction department with a view to promoting researches of the type illustrated above in all directions and through all the officers. It is hoped that the survey may stimulate an extension of this type of work.

The same kind of a plea may be cast in the form of a recommendation for more educational publicity.

Publication of Educational Studies

A number of the principals of the elementary schools have in recent years made careful studies of various aspects of school organization in the schools over which they preside. The papers which have resulted from these studies have in several cases been made accessible to the survey staff. Without attempting to review in detail all of these studies, it is appropriate that comments should be made on the desira-

bility of the production of such papers and the further desirability of bringing them to public attention.

Thus, studies have been made on the spelling lists that have been used in the schools. A number of the results of these investigations of spelling have been embodied in the reports of the Committee on the Revision of the Course of Study, to which reference has been made from time to time in this report. It is important that all revisions of the course of study should be based upon a clear knowledge of the reactions of the children to the subjects in the course. Investigations of spelling are therefore to be commended as the only suitable basis for a revision or enlargement of the course of study in this subject.

These investigations have not, however, been circulated in any general way so that the teachers of the system can become acquainted through these papers with the problems that confront all of the schools in their teaching of spelling.

The purpose of this comment is to urge on the school system of St. Louis a larger degree of publicity. The time has passed when studies with regard to the list of words used in the spelling lesson are a purely technical matter. It is indeed true that the technical methods for carrying on such investigations have been highly perfected in recent years, but it is equally true that the intelligent citizen who is interested in matters of education has a right to participate in the results of these investigations. Just in the degree in which education becomes a scientific subject will it attract the support and interest of intelligent citizens outside of the teaching profession. It is no indictment of a school system that it discovers by careful scientific studies possible improvements in its methods of procedure. Indeed, it is the highest guarantee of future success in education that the school system is carefully scrutinizing by scientific methods every phase of its work. In emphasizing these studies which have been made in the school system of St. Louis the survey is merely reiterating the conten-

tion which has been set up at a number of points that supervision should, so far as possible, be based not only on personal observations made by efficient supervisors but also on objective scientific studies.

Furthermore, the time is evidently ripe for an argument in favor of much greater general publicity in regard to school matters. In all parts of the United States the demand is heard today for a complete explanation of what is going on in the way of school activities. The course of study is being enlarged and some people are objecting to this enlargement because it has not been carefully explained to them. Others are disposed to look upon the course of study as too stable in its characteristics. These people need to be informed of the great changes in organization and content which are going on. A school system ought to set aside a certain part of its energy to carry on a continuous campaign of education of all of the people in regard to its various lines of activity. Such an effort on the part of the school system to describe its work will immediately result in an improvement of the work itself because the formulation of any statement with regard to what is being done in the schools will bring to the fore questions that would be overlooked if the school system should operate without attempting at all times to define itself to its constituency.

Especially in a city like St. Louis where the Board of Education is an elective board, and where each year it is necessary to train as a part of the Board of Education new citizens who are chosen to represent the financial and educational interests of the whole community, is it important that there should be a constant stream of information furnished by the school officers with regard to their activities. The papers which are prepared by principals of the public schools of St. Louis ought to be printed in some very accessible form which will reach all of the teachers and all of the interested citizens of the community. Such a printing of

reports would stimulate the preparation of reports and would contribute to the development of scientific methods and to the application of such methods to school problems.

The Department of Instruction issues from time to time a periodical called "Public School Messenger." This publication might very properly be expanded to cover the suggestions made in the foregoing paragraphs. The present form of the "Messenger" is very useful as a medium of communication between the Superintendent and the teaching body. In its expanded form it could become a medium of communication between the School System and the community as well as between the St. Louis system and other systems.

CHAPTER II

ADMINISTRATION AND ORGANIZATION OF THE BOARD OF EDUCATION

By H. C. Morrison

Summary[1]

Superintendent Morrison gives a detailed description of the organization of the Board of Education and of the functions of all of the officers appointed by the Board. St. Louis has a unique school charter which defines in detail the functions of all of the important officers of the school system. This clear statutory definition of duties is very advantageous and leads to a perfection of organization not common in American cities.

The differentiation of various functions and assignment of these to different officers are in Mr. Morrison's judgment wrong in principle. He finds it operating without serious jar. Later sections of the report will emphasize the difficulties here pointed out.

The operations of the Board are described. The department of instruction is discussed in detail. The plan of special supervisors for special subjects is discussed. Mr. Morrison is critical of the plan now in operation in St. Louis.

In like fashion the operations of each of the central offices are described.

A summary closes the study. The chapter is in the main descriptive and recommendations are not made except in the body of the discussion.

Mr. Morrison brings out the general fact which is a subject of recurring favorable comment in a number of the reports that the successful organization of the St. Louis system is unique among American school systems.

[1] By Chas. H. Judd, Director of the Survey.

ADMINISTRATION AND ORGANIZATION

The Public School System of the City of St. Louis is governed by a Board of Education which derives its powers from a Charter granted in 1897. Under the terms of the Charter the Board exercises, with minor exceptions, all the powers granted to school districts under the general laws of Missouri, including that of taxation.

In the study of the evolution of this city School System, the work of the survey has been greatly facilitated by a series of very complete volumes of proceedings of the Board. The record of each meeting is available in printed form and each such record is made in great detail, showing the business presented, the course of debate, and the final action. In our study of the problem of Administration and Organization, reliance has been placed very largely upon this mass of printed material, checked and verified so far as practicable by conference with individuals who have had personal knowledge of the facts.

Historical. Prior to the granting of the present Charter, approved March 23, 1897, the schools had been governed by a Board of twenty members elected in part by wards and in part at large. The powers of the old Board were much more loosely defined and, in general, it appears to have been a typical city school board of that period, and even of the present period, endowed with large discretionary powers.

In practical operation this old Board had degenerated in its last days to the point where it was often frankly engaged in playing partisan politics; its meetings were at times spectacles of rancorous divisions among its members on issues not at all related to the essential interests of the school system. It was under suspicion of more or less extensive graft. Its executive officers were entirely the crea-

tion of the Board, deriving their powers essentially from the Board and, for the most part, little better than figure heads in the conduct of the business of the school system.

A study of the records of the period just before the adoption of the new charter, shows that, when this old Board concerned itself with the administration of the school business, it was quite apt to debate at length such essentially executive and professional matters as the selection of pens, the adoption of text-books, etc. The selection of teachers and other members of the professional force of the system was made a matter of frequent division of the School Board. The recommendations of the Superintendent of Schools appear to have been of little moment except in purely routine matters, and it is admitted that in the end the recruitment of the teaching force and especially of the janitorial service had become a matter of utilization of the school system for purely political purposes. We find in the records frank statements by members of the Board that its business has become a matter of partisan politics, with members of both parties voting as Democrats and as Republicans rather than as representatives of the people in charge of the public school system. Dissatisfaction became so pronounced that those elements of the citizenship which were vitally interested in the schools organized themselves for the purpose of securing legislation calculated to better the existing conditions. It is of record that the old Board sent its attorney to Jefferson City for the purpose of contesting the enactment of the proposed legislation. Among the friends of the new Charter were numbered some of the strongest business and professional men of the city. Their organization and their efforts were successful, and the existing Charter became a law.

Charter. The Charter of 1897, which has served its intended purpose for nearly twenty years, is a model fundamental law for the government of any school system. It represents the highest type of professional insight combined with re-

markable legal expression. It has rarely if ever been equaled in its appreciation of the principles governing the administration of schools, in a nice and accurate adjustment of these principles to the demands of popular self-government, and in the embodiment of all in the construction of a piece of legislation calculated to stand the severest constitutional tests. It has served its purpose for a long period of years and there seems to be no reason to doubt that in its essentials it will serve that purpose for many years to come.

A brief résumé of the essential provisions of the Charter is here given.

The statute is made general rather than specific and is applied to "every city in this State now having, or which may hereafter have 500,000 inhabitants or over."

It is provided that every such city "shall be and constitute a single school district, shall be a body corporate, and the supervision and government of public schools and public school property therein shall be vested in a Board of twelve members to be called and known as the Board of Education, and in a Superintendent of Instruction, and a Commissioner of School Buildings."

The members of the Board of Education are elected from the city at large from a general ticket. They are required to be at least thirty years of age, citizens, residents, and taxpayers in the city for at least three years immediately preceding their election. It is provided that they shall not hold any other office except that of Notary Public, nor be interested in any contract with nor claim against the Board, either directly or indirectly. If, after election, any member of the Board becomes interested in any such contract or claim, he automatically becomes disqualified to continue as a member of the Board. He is required to make oath that, among other things, he will not be governed by any consideration other than that of merit and fitness in the appointment of officers and the engagement of employees.

The members of the Board serve without pay. They are, however, exempt from jury duty and from service as election clerks during their term of office. In the selection of candidates for membership upon the Board, it has been customary for the Conventions of the two principal political parties under mutual agreement to place in nomination four members each, two of whom withdraw, four members being elected biennially for a term of six years.

Any member of the Board failing to attend the regular meetings for three consecutive sessions, unless excused by the Board, shall be deemed to have vacated his seat, and in that case it becomes the duty of the Mayor upon formal notification by the Secretary of the Board to appoint another qualified person to fill the unexpired term. The proportion of the members in attendance at every meeting is unusually high. It is a very rare occurrence indeed when less than ten members have been present, and the records of most meetings show an attendance of the full board.

The Circuit Court of the City of St. Louis has jurisdiction over the members of the Board of Education, and through it any member or members may be called to account at any time for malfeasance or neglect, or action not warranted by the Charter. Very recently a seat on the Board has been vacated by action against one of its members who was held to have acted improperly with reference to the purchase of a site for a new school building. The Charter had provision for just such cases, and though it had never yet been necessary to utilize the legal machinery provided for the purpose it was found to be in good working order when needed.

It is provided by the Charter that it shall be the duty of the Board of Education to appoint a Superintendent of Public Instruction, a Commissioner of School Buildings, a Secretary and Treasurer, an Auditor, and such other officers, employees, and agents as it may deem proper, provid-

ed that no such officer, employee, or agent shall be a member of the Board.

In addition to the four executive officers provided for by the Charter, the Board has created the offices of Commissioner of Supplies, and Attorney.

The Superintendent of Instruction, the Commissioner of School Buildings, the Secretary and Treasurer, and the Auditor derive their powers directly from the Charter and not from the Board of Education which elects them. There is no feature in the whole Charter of more critical importance than this.

The Charter authorizes the appointment of Assistant Superintendents of Instruction and assistants to the other executive officers, but it is provided by law that, while the number and character of such positions are within the discretion of the Board, the initiative in appointment is in the hands of the executive officer whose department is concerned. The Superintendent of Instruction, for instance, may recommend the creation of an additional assistantship. It remains for the Board to decide whether or not such positions shall be created. Once created, the Superintendent nominates and the Board appoints. The Board may not lawfully go over the Superintendent's head and appoint its own selection. It may reject the nomination of the Superintendent, but in that case the Superintendent must make another nomination, so that finally the selection will be the Superintendent's selection, while the Superintendent is prevented from utilizing his position for the purpose of creating a personal machine about as effectively as it is possible to prevent such an outcome by legislation. The same principle applies to the other executive departments.

The Superintendent of Instruction is elected for a term of four years and is not removable during his term except for malfeasance in office, and that only by action of the

Court. The compensation of the Superintendent of Instruction may not be reduced during his term of office.

The Commissioner of School Buildings is appointed for a term of four years, but he may be removed by the Board of education for cause by a two-thirds vote of the entire Board at any time. Like the Superintendent of Instruction, his salary may not be reduced during his term.

The Secretary and Treasurer holds office under substantially the same conditions as the Commissioner of School Buildings, as does the Auditor.

Powers of the Superintendent of Instruction. The Superintendent of Instruction derives directly from the Charter the powers which are here outlined. He may be, and has been given other powers by regulation of the Board, in which case he exercises the new powers in the spirit of the Charter powers.

(1) He has general supervision, subject to the control of the Board, of the course of instruction, discipline, and conduct of the schools, the selection of text-books and other apparatus, and the organization of the course of study.

"Subject to the control of the Board" means that all his acts in these respects are subject, in the last analysis, to the review of the Board. The initiative, however, is with him; the Board may not legally initiate action within the region of the activities enumerated.

(2) Subject to the approval of the Board, he must make all appointments, promotions, and transfers of members of the staff in the entire Department of Instruction. Here again he initiates; the Board ratifies. The Board cannot initiate.

(3) The Superintendent has Charter power to suspend any teacher for cause deemed by him to be sufficient. The Board either confirms or repudiates his action in this in-

stance by final trial of the case; that is to say, the teacher affected has the right to appeal to the Board.

(4) It is provided that all appointments and promotions of teachers must be made upon the basis of merit. It is prescribed that merit shall be ascertained so far as practicable in cases of appointment by examination and in cases of promotion by length and character of service.

Examinations for appointment must be conducted by the Superintendent under general regulations to be made by the Board.

(5) Clerks in the Department of Instruction are appointed directly by the Superintendent without approval by the Board, and he has summary power to remove the same.

Powers of the Commissioner of School Buildings. The Charter powers of the other executive officers follow in general the principles described in the case of the Superintendent of Instruction. They are assumed by the Charter to be professional experts who are required to devote their whole time to their duties. They initiate all activities within their departments, and the Board ratifies or rejects such activities.

(1) When the erection of a new building is determined upon, the Commissioner of School Buildings prepares or causes to be prepared all the necessary specifications and drawings, and the construction of the building is under his general supervision.

(2) All repair work on the school plant is under the direction of the Commissioner of School Buildings.

(3) The appointment of assistant executives in his office, of janitors, engineers, and other employees is in the hands of the Commissioner. The Board determines, upon his recommendation, the number of such officers or employees as there may be, and their compensation. The Commis-

sioner appoints. In this his power and responsibility are final: his appointments are not subject to approval. Thus, there is removed a powerful temptation to seek positions upon the Board for the purposes of petty politics. The janitorial service has in practice in most cities been the most prolific source of politics in the public school service.

The Commissioner has summary power of removal of any officer or employee in his department.

Powers of the Secretary and Treasurer. The Secretary and Treasurer has come to be a very important officer of the Board of Education.

(1) Supervision of fiscal affairs. He initiates, and the Board sanctions all activities in the general field of financial control and fiscal policy. It is commonly recognized, in theory at least, that the department of instruction should be in the hands of an expert. It is rarely the case that a similar construction is placed upon the formulation and conduct of the financial policies of school systems. It is thought that Boards will be composed of individuals who are competent to conduct their own affairs successfully and therefore the financial affairs of a school system. Waste and an inadvertent and inconsistent financial policy is the not uncommon outcome. Individual attention, capacity, permanency and responsibility are as necessary in this case as in the other.

He oversees the collection of revenue, and the payment of moneys out of the School Treasury, to the extent of seeing that all is done in accordance with law, and that no appropriations are overdrawn. The Board of Education cannot legally override him at this point. Such is the power which he derives directly from the statute. He is the custodian of the funds of the Board.

(2) The Board has come to own a great deal of income-producing real estate located in different parts of the city,

and the Secretary and Treasurer has general oversight of the leasing, renting, and sale of such property. He initiates and recommends to the Board. The Board sanctions or disapproves.

(3) As Secretary of the Board he is their legal mouthpiece; that is to say, he certifies all their acts and notifies all parties concerned of their acts.

Powers of the Auditor. The Auditor is essentially the chief accountant of the Board. He passes upon the validity of all claims against the Board prior to the reference of the same to the Treasurer's Department for payment.

Powers of the Commissioner of Supplies. The Commissioner of Supplies has no Charter powers. He derives his powers from regulations adopted by the Board in conformity with provisions of the Charter, and exercises functions strictly in keeping with the principles laid down in the Charter for the other four executive officers. He is the purchasing agent and the custodian of the Board's warehouse. He appoints his entire staff, subject to the approval of the Board.

Discussion of Charter Provisions

Students of the basic principles of school administration and government are agreed upon the following points:

(1) There must be a Board of officers, preferably small in number, either chosen by the people or appointed by some officer who is himself directly responsible to the people. There is no unanimous agreement as to how any such Board should be chosen, whether by election or by appointment. The weight of authority, on the whole, inclines toward appointment by the Mayor. There is, however, it is universally admitted, much to be said against this practice and in favor of election by the people at a general election.

There is substantial agreement on the point that it is undesirable to have members of School Boards elected by the City Council or other similar bodies.

There is substantial agreement that it is always undesirable for ward lines or other geographical divisions to be considered in case members of the Board are chosen by popular election. There is an overwhelming mass of evidence tending to show that election by wards is very fertile in promoting "log rolling" within the Board after election.

The Board of Education of St. Louis is chosen by one of the two methods most commonly advocated by students of the subject.

(2) The School Board, when once chosen and seated, should confine its activities strictly to legislation, to the selection of its executive officers, and the confirmation of their acts.

It should exercise no initiative whatever in strictly executive functions, but it should select executives capable of wise initiation and experts in their several fields of work, and capable of taking and bearing responsibility. Having chosen them, it should never hamper them by undertaking to perform their duties itself. If they neglect their duties or prove incompetent, they should be discharged, but the Board should not attempt to take their places either as a whole or by committee, nor should the Board tolerate any interference with the executive officers by its own members.

It would be hard to see wherein the Charter of 1897 failed to make adequate and accurate provision for the practical working out of these principles.

(3) Efficiency in the administration of school systems, as in the efficiency of any other enterprise whatsoever, depends absolutely upon the principle of undivided responsibility. The community may prefer, sentimentally, divided powers and be willing to overlook or to accept the results of consequent divided responsibility. With that we can

have no quarrel. But in the minds of students of the problem, there can be no question that if efficiency is desired and a high value is placed upon efficiency, then there must be undivided responsibility, that is to say, all activities within the system must centralize in one individual and pass through him to the representatives of the people chosen to scrutinize his work and to hold him to responsibility.

It would appear from a study of the Charter that there is a defect here, inasmuch as the several departments of the school activities are separated and collected under five working heads, each of them responsible to the Board of Education but not responsible to any single superior officer who might be in turn responsible to the Board of Education. It would further be generally agreed that in theory the St. Louis Charter is weak in this respect, and it would further be predicted that sooner or later the existing organization will make trouble. At present, and in the past, in practice the St. Louis departmental organization seems to have worked very well. This is, no doubt, very largely due to the fact that, while there is no single executive head to the school system, the several departments are so organized that they are not likely to come in conflict with each other, and at the same time skillful provision has been made by the Board of Education to unite the departments at all points where they might disagree, to the harm of the essential work of the system which is education. For instance, whenever a new building is to be erected, initiative as to the site is taken by a Committee composed of the three departments chiefly concerned, to-wit, Instruction, Buildings and Treasury, with the Superintendent of Instruction as Chairman. It is also apparent that the Board has worked out a very skillful distribution of the functions of the several departments, to the end that no department shall invade the territory of another to the harm of the efficiency of the school system as a whole. For instance, in the pur-

chase of educational supplies, the selection of those supplies is made by the Department of Instruction; the actual purchase by the Supply Department. Again, certain phases of janitorial service concern equally the Instruction, Building, and Supply Departments. The janitors themselves are under the control of the Building Department, but all requisitions for Building Supplies must be approved by the principal of the school, who is a member of the Department of Instruction, and purchased by the Supply Department.

A prolonged study of the activities of the Board, as disclosed by its voluminous printed reports or proceedings leads the present investigator to conclude that, in spite of an apparent violation of an important principle of school administration, the St. Louis plan, in practice, has worked efficiently and economically.

(4) Quite as important as either of the foregoing in the mind of the present writer, although not so frequently noted by other students of the problem, is the principle that chief executive officers should derive their powers directly from the statute and not from the Board itself. It is not uncommon to find cities in which the school systems are governed by Boards of Education composed of intelligent and capable citizens who recognize the foregoing principles in full and abide by them, but who have complete discretionary powers over the schools under a statute which is generally vague and frequently very loose in construction. The practical outcome is that the history of such school systems exhibits frequent "ups and downs." An excellent School Board controls the schools for a period of years, but is gradually replaced by a Board which is composed of less capable individuals, which very commonly attempts at once to perform the duties it should leave entirely to its executive. The result is, with striking invariability, disorganization, inefficiency, and final dissatisfaction in the city, with the result that for a further period a better type

of men are selected for the Board. The cycle will, of course, repeat itself indefinitely. It would seem to be that we have here an extremely important principle involved, to-wit, the principle of government by law as over against personal government. Where the executive, especially the Superintendent of Schools, derives his powers directly from the statute, there is little or no danger that the Board will assume the powers which efficiency demands should belong to him, and if it does so do it is always easy for any citizen or group of citizens to call the Board to account. It is true that no instrument of government devised by the mind of man ever did or ever will serve as a substitute for integrity, intelligence, and competency on the part of the men who execute that instrument, but there is a vast difference between conditions likely to occur over a period of years under a Charter so carefully drawn as this, and so in conformity with the principles of school administration, and conditions likely to occur under a Charter which leaves it to the School Board to hold sound or unsound relations with its executives at its option.

The school history of St. Louis for the past twenty years, when scrutinized in comparison with the school history of many, if not most other cities, large and small, bears eloquent testimony to the soundness of the principle just set forth.

How the Board Does Its Work

There are four standing committees of the Board of Education, namely, Instruction, Finance, School Building, and Auditing and Supplies. The President is ex-officio a member of all committees. There are created special committees from time to time.

Meetings of the Board are held monthly except in the month of August. About a week prior to the regular monthly meeting of the Board each of the Standing Committees has its meeting with the head of the department

concerned. At that time the department heads lay before the Standing Committees the state of the departments for the month, inform the committees of their activities, state what new activities they propose to enter upon in the immediate future, and discuss the general policy of the department with reference to remote contingencies. By these means each department head is enabled to keep in very close touch with his committee, and the several department heads are informed of the feeling of individual members of the Board and, in a word, the needed personal contact and understanding is secured. Any member of the Board is privileged to attend any meeting of a Standing Committee and to participate in the discussion. As a matter of fact, this is frequently done, and a meeting of a Standing Committee very frequently becomes a meeting of the Committee of the Whole. In this way each committee reports a great mass of material for action by the Board.

Two or three days before the Board convenes galley proofs of all reports are sent to the members of the Board. Also when the full Board comes together in regular monthly session the week following committee meetings, each member finds before him a complete galley proof printed account of the recommendations of the Department Heads and the action thereon of the Standing Committees. The action of the Board as a whole then becomes, except in rare instances, substantially a ratifying and legalizing process. It is, however, entirely competent for any individual member of the Board at monthly meeting to call in question any act of a Standing Committee and secure action upon the same by the full Board, if it is felt to be necessary. Ordinarily the meetings of the Board are very brief. Following the meeting, the galley proof referred to above is printed as the monthly volume of proceedings, which then becomes public property. Each such volume of proceedings is a pamphlet of not far from 100 pages, and the volumes which are bound up annually contain, of course, a very complete

history of the activities of the Board for the whole period of its existence.

This method of procedure has certain important implications, tending in the direction of efficiency on the one hand, and in the direction of wise publicity on the other, which are worth noting.

(1) In the first place, each department head is thus enabled to keep in close personal touch with the members of the Standing Committee assigned to his department and, also, with the attitude of all members of the Board toward his department in a recognized and useful way. The practice tends to eliminate very largely eminently undesirable methods which the type of organization and the methods of doing business in many cities tend to favor.

(2) All members of the Board are kept in real contact with the business of a huge school system. The school system of St. Louis is, without doubt, one of the largest single enterprises of any kind conducted within the limits of the city.

(3) Preparation by the heads of the departments, review by the Standing Committees, and presentation of transactions in print make it possible for the School Board to transact an enormous amount of business which belongs to it to transact, without frittering away its time on a multitude of unrelated and probably insignificant details and, in the end, leaving the really important part of its business undone.

(4) It is possible for any citizen to secure at any time direct authentic information as to the acts of the School Board. The pamphlets containing the printed proceedings are printed in numbers large enough to furnish copies to interested citizens, and doubtless would be printed in quantities large enough to furnish copies to meet any demand which commonly might be made. It seems to the Survey that we have here an admirable instance of the right kind

of publicity. In contrast may be cited another practice prevalent in many cities and, it might be said, the common practice in the United States. The writer has in mind the monthly meeting of the School Board, the reports to which are entirely verbal, in which action is taken after debate, and the only record is the Secretary's concise record of action taken. Experience shows that, under such conditions, not only do the members of the Boards themselves not infrequently fail to understand just what is being done, but the public is informed by representatives of the press who report the proceedings as they see them and who necessarily cannot have a full understanding of the procedure.

The printed statement of business before the St. Louis School Board, revised and bound up after the meeting makes misunderstanding and lack of essential information unnecessary, if not inexcusable. All transactions of the Board for the year are there in print in great detail.

Organization of the Department of Instruction

This department is, of course, of first importance. The other departments exist in order that the Instruction Department may do its work effectively and economically.

At the head of the Department of Instruction is a Superintendent. He has four assistant Superintendents.

Included in this department are: Teachers College, High Schools, Elementary Schools, Kindergartens, the Evening Schools, Special School for Deaf, the Special Schools for Sub-normal Children, the Ungraded Classes, the Educational Museum, the Industrial School, the Psycho-Educational Clinic, the Open Air Schools for pupils of tubercular tendencies, the Summer Term Schools, the Attendance Division, the Division of Hygiene. We may also find in this department a corps of special subject supervisors of draw-

ing, kindergarten, manual training, music, penmanship, physical training, primary work and school gardens.

The administration of the Department of Instruction might be described as an organism with the Superintendent as its head. The administration is not a personal administration, and it is centralized only as any organized effort is always centralized. Every individual connected with the department, certainly every teacher and principal, each in his or her own place, can contribute to the organization and administration of the whole department, provided he or she has the ability to do so and is willing to take the responsibility. The final decision, that is to say before coming to the Board and its committees, rests with the Superintendent. He is the responsible head of the department, and it is this power of final decision which makes him the responsible head.

Assistant Superintendents. The Assistant Superintendents are exactly what the designation implies. They are assistants to the Superintendent. Each is assigned certain schools and certain parts of the activities of the department for his immediate oversight. Their activities within their districts are subject, however, to reference to the Superintendent if any questions arise and the Superintendent keeps in close contact with all that they do through frequent meetings and reports.

The Principals. Each school, large or small, is in charge of a principal. The building is the real supervisory unit of the system, and the principal is the supervisor and administrative officer in charge of the unit. His powers, with reference to the school over which he presides are essentially the same as the powers which the Superintendent exercises over the whole department. He exercises, in general, just as much power and exerts just as much influence as he is willing and able to assume responsibility for.

Principals are sometimes assigned to special duties, such as, for instance, supervision of Grade Manual Schools during the summer vacation, and of the Evening Schools during the school year.

Heads of Divisions. Besides the supervisors of special subjects there are the Attendance Division, the Division of Hygiene, and the Psycho-Educational Clinic. Each of these bears, to all intents and purposes, the same relation to the Superintendent's Office as do the principals; that is to say, he or she may and is expected to initiate measures within the Division for improving its efficiency, and such measures go into operation when sanctioned by the Superintendent.

Supervisors of Special Subjects. The supervisors of special subjects and their assistants are specialists who direct instruction in their several subjects. Their functions cut across those of the principals so far as the special subjects are concerned, and to that extent duplicate the functions of the principals. The relation is a common one in American city systems. It can rightly be understood only when considered in its historical setting.

In the third quarter of the last century it came to be felt that elementary education limited to the common subjects of the period, had ceased to be sufficient. The great expositions held in this country and in Europe at that time made it apparent that those nations which had enriched their elementary curriculums by the inclusion of subjects chosen from the fields of the fine and industrial arts had achieved a notable industrial supremacy. There was felt to be a relation of cause and effect between the two. At about the same time came a popular awakening as to the broader meaning of education, and coincidentally there appeared new conceptions of pedagogy of which the kindergarten was perhaps the most noteworthy example. St.

Louis was among the pioneers in all this and was first in the field with the kindergarten as an integral part of the public school system.

Now, all this movement in its various aspects found the regular teachers and supervisory officers unprepared. It was necessary to appoint special teachers and special supervisors. It is difficult to believe that men like William T. Harris and other forward-looking administrators of the time contemplated that these special teachers and special supervisors ought to be a permanent feature of the school system. They were placed in service to meet a need existing at the time and which after a generation of training teachers in these as well as in other subjects is at least very much reduced. In the judgment of the present writer the reduction in this need is much more than is recognized in St. Louis.

Other special subjects, like primary methods and penmanship, have come into the schools with a history somewhat different from that of manual training, drawing, music, physical education and others. The former are types of special subjects which have come into the system when the results in the same as regular subjects had become unsatisfactory and when it was felt that special instruction of the teachers and special supervision of the work had become for the time being necessary. In the case of penmanship, for instance, it not only does not appear that at the time of its introduction a permanent special department of teaching and supervision was contemplated, but on the contrary it does appear that the expectation was that it would be temporary. The one conspicuous consideration was that penmanship needed radical improvement.

Of the special subjects, music, drawing, and manual training are old; school gardens is new. Domestic science is supervised by the same man who has charge of manual training. It seems strange that it has not been felt neces-

sary to set up nature study as a special subject and perhaps others. Such has been the case elsewhere.

At the time when the special departments of teaching were instituted, the case was clear. There was a real need for them. Since then a generation of teachers has grown up, has received its training in these as well as in other subjects, and has taken its place in the schoolroom. Most teachers in St. Louis, certainly most of the younger teachers, are as familiar with drawing and music, for instance, as with geography and arithmetic. Their training has been adequate.

No doubt the work of the special subject supervisory force is on the whole effective. It is very likely true that work in the regular subjects is more effective than it would be were not the teachers relieved to a certain extent by the special supervisory force. It is not, however, apparent from the evidence in our hands that this is true. But if these things are true, then it would seem to be evident that the work of the system as a whole could be improved by instituting special supervisory forces for all the regular subjects. It is hard to see why there is not as great need for special supervision of arithmetic as penmanship; of geography as well as drawing, and so on.

In brief, the system is at an half-way point. If the special subject supervision and organization is valuable, then it should be extended and applied to the subjects now treated as regular. If it is not valuable enough for this course, then there is no reason for its permanent inclusion in the school system, and the gradual elimination of the special supervision should begin at an early date.

A middle course is possible, to-wit, the development of a departmental system of instruction in the elementary schools. It may easily be found as a matter of fact that proficiency in all the subjects now included in the program

is too much to require of any one teacher in any grade or room. The fact should be determined. If it is found to be true, then either special subject supervision should be extended and applied to all subjects, or the elementary schools should be departmentalized.

The last report of the Board of Education shows 38 supervisors and assistants at an aggregate salary of $63,030. If the system is worth this much, it is worth much more. If it is not worth much more, by extension to all the regular subjects, then $63,030 is too much money to be spending on these departments.

This recommendation does not signify that the system would have $63,030 clear gain if the foregoing recommendations were accepted. General supervision needs to be strengthened, as, for example, by giving principals more assistance; and the teaching energy which is now brought into the system by the supervisors of special subjects would have to be supplied by an increase in the general teaching staff. The foregoing argument aims to put the special subjects on the same footing as the general subjects. It is one of the chief needs of the St. Louis system, as shown in subsequent sections of this report, that the burden of all teachers be lightened in all subjects. The argument here is for a general distribution of supervision and of teaching energy.

The Course of Study. A revised course of study is at the present time in preparation and partly in operation. The new course of study is being worked out by committees which deal with each subject and report to a central reviewing committee.

Following this discussion material is assembled by a committee appointed for the purpose by the Superintendent. Final action upon the course before carrying it to the Board for adoption is by the Superintendent. The course is, as it

should be, in the last analysis the act of the Board of Education.

Preparation of courses of study in the United States has seen two somewhat distinct phases and is now beginning to pass into a third. Originally the course of study was imposed from above, that is to say, it was usually evolved from the inner consciousness of the Superintendent of Schools, or more frequently and less happily, from that of some person holding a transient official relation to the school system, without special educational training or interest. It is not uncommon still to find courses prepared in that way.

In school systems which have entered upon the second phase, the course of study is commonly developed as the new course is being developed in St. Louis; that is to say, originating in general discussion of the teaching force, it is organized by a committee of teachers and finally passed upon by the responsible head of the school system and adopted by the Board of Education.

There seems to be some reason to think that we are about to enter upon the third phase in which the course of study in the main will be the product of research work, arriving at definite facts as to the utility of the several subjects of the course and more especially as to their proper place in the organized whole as determined by considerations of pupil capacity and most economical learning.

Selection of Teachers. Teachers in the elementary schools ordinarily enter through Harris Teachers College, which is essentially the place of training for prospective teachers and a place of post graduate study for teachers in the service.

At the beginning of the second year, students enrolled in Harris Teachers College go out for half a year into the regular schools as apprentice teachers. Here each comes under the observation of a principal and at least one assist-

ant superintendent. There is, of course, opportunity for conference also with members of the staff of special supervisors. In the event that the apprentice does not prove satisfactory to the principal, he may make an unfavorable report upon her work and then she may be tried out elsewhere. If finally found unsatisfactory, she is eliminated at that point. In the last class of 50, four failed to pass.

Upon graduation from Harris Teachers College, she is placed upon the list of substitutes and, sooner or later, is called into actual service as a substitute. During her term of service as substitute she is still under observation and, if successful, finally qualifies for a permanent position. Nominations to positions on the permanent force are made by the Superintendent and approved by the Board. For positions in the elementary colored schools the same course is in general followed, substituting the Normal Course in the Sumner High School (colored) for that in Harris Teachers College.

Nominations to principalships or to headships of divisions are made from a carefully prepared list of available candidates. In making nominations the Superintendent acts in conference with an assistant who, in turn, keeps in touch with the needs of the position. The same course is followed with reference to high school teachers, except that here the principal enters the conference.

Reappointments. Twice each year each principal is required to report to the Superintendent's Office his estimate of the quality of the work of each of the teachers of his school. Two reports are made, one in November, and a final annual report in April. These reports must be in writing, over the principal's signature. Prior to making recommendations to the Board for reappointment, these principals' reports are subject to conference between the principal and

the Assistant Superintendent assigned to that school, and ultimately with the Superintendent of Instruction himself. Teachers are appointed for one year and reappointments are usually made in the form of a recommendation by the Superintendent that all on the list be reappointed with certain exceptions.

All original appointments are made on probation. The Superintendent is required by rule to prepare a list of eligibles for promotion in the order of their merit in accordance with information received from the principals, and submit the same with his recommendation to the Committee on Instruction prior to the June meeting of the Board.

Selection of Textbooks and Scholastic Apparatus. There is essentially no closed list in St. Louis. Needed texts and needed apparatus are selected by the teacher concerned, recommended by the principal and passed upon by the Superintendent, who recommends the same to the Committee on Instruction for action by the Board. Selection of textbooks is not hampered by rules as to adoption save that it is provided that a book may not be changed during the school year.

Schoolroom supplies and apparatus required by a single department as, for instance, in the high schools, are selected by that department and, with the approval of the principal, are forwarded to the Superintendent's Office and, thence upon approval go directly to the Commissioner of Supplies by whom they are purchased. Supplies intended for general use, such as pencils, note books, paper, etc., are passed upon by a committee of the teaching force appointed by the Superintendent. This committee essentially determines the specifications, but the goods are ultimately purchased by the Supply Department.

New Buildings and Sites. The initiation of a movement for a new building originates with the Superintendent of In-

struction. When he has become convinced that a new building is needed he presents the matter to a joint committee composed of the Committee on Instruction and the Committee on Finance. Upon their favorable action the full Board decide, sanction, and authorize the erection of buildings.

The selection of a site is made by a committee composed of the Superintendent of Instruction as Chairman, the Secretary and Treasurer, and the Commissioner of School Buildings. Their recommendation is made to the Board and, if adopted, the Secretary and Treasurer is ordered to purchase the site.

The Secretary and Treasurer's Office

The Secretary and Treasurer, in his capacity as Secretary, is the recording officer of the Board and its official spokesman in all matters requiring certification and official notification.

In his capacity as Treasurer he is not only the custodian of the Board's money but is also the financial expert of the Board and its man of business. He works with the Finance Committee. His duties may be summarized by the statement that he is supposed to be vigilant on all financial matters about which the Board should be advised and informed, he recommends financial action, and when the Board decides to take financial action such action is taken through the Treasurer. For instance, if the Board decides that it is necessary to negotiate a short-time loan in anticipation of taxes, the Treasurer negotiates the loan. If the Board has decided to buy a certain lot for a school house, the Treasurer completes the transaction.

In addition to the ordinary financial duties which School Boards commonly have, the Board of Education of St. Louis is an extensive real estate holder. It owns an office build-

ing in the downtown district on the fifth and sixth floors of which the executive offices are located. It also holds a large number of individual lots in different quarters of the city which, in the early part of the last century were assigned to the support of the schools by the laws of the State, and which, with the growth of this great city, have in many instances become very valuable. Leasing, renting, and selling this real estate is a very considerable part of the duties of the Treasurer's Office.

The Building Commissioner's Office

When the Superintendent of Instruction has advised the Board that a school house should be provided in a certain location, and the Board has agreed that it should be, and when the Committee of Executive officers above referred to has recommended a site and the Board has authorized its purchase and the Treasurer has completed the transaction, the Commissioner of School Buildings erects the building and assumes charge of the same for all future time.

In a word, the Commissioner of School Buildings is the Board's expert on the physical plant, is their informer and adviser in all matters relating to the plant, and is the custodian of the buildings and the organizer and director of the engineering and janitorial service and of all details connected with the building, repair, and upkeep of school houses.

He acts through the Committee on School Buildings, which recommends to the full Board.

Erection of New Buildings. The preparations of plans and specifications is under the direction of the Commissioner, although there may be, and sometimes has been, an architect in addition for this particular part of the work. He conducts the advertising for bids, classifies the same, and is the adviser of the Committee on Buildings as to bids.

He superintends the construction and is responsible for seeing that the same is done in accordance with specifications.

Repairs. The Commissioner and the Committee on School Buildings have ready for the April meeting of the Board a complete statement and schedule of the repairs and improvements that are to be made during the summer vacation. When the schedule is authorized, repairs are carried out under the direction of the Commissioner.

Staff and Employees. Besides his general office staff the Commissioner has the following heads of divisions: Drafting Room, Superintendent of Electric Work, Superintendent of Construction, Supervisor of Janitors, Chief Engineer, Superintendent of Shops and Repairs, Landscape Gardener, and Superintendent of Plumbing.

The Commissioner of School Buildings has power to appoint his chiefs of divisions and all subordinates subject to the Board's approval of the number and salary of such appointees. He also has under the Charter summary powers of removal.

Janitors, however, are classified and are appointed from an eligible list determined by examination. Applicants for position as janitor are examined by a Board appointed by the President of the Board of Education and consisting of the Commissioner of School Buildings as Chairman and two other members appointed from the Instruction Department. The examination covers ability to read and write, perform ordinary arithmetical calculations, knowledge of the duties of the position, ability to attend to small repairs, experience in the supervision and management of subordinate employees, extent of general information, intelligence, physical vigor, and personal habits. The successful applicants are graded according to their standing in the examination, and appointments are made to positions on the janitorial

force from this eligible list and in accordance with the relative standing on the list. The examination appears to be well calculated to serve its purpose, and is rigorous and searching.

Repair Shops. The Board of Education maintains woodworking, painting, and repair shops for ordinary repair jobs and for both construction of repairs for furniture and other appurtenances. Extensive repair jobs involving remodeling of buildings are contracted. A force of repair men is kept on the pay roll throughout the year, and this force is greatly augmented in the summer time. Trouble anywhere in the school plant calling for the services of repair men is reported to the Commissioner who at once puts the appropriate repair crew on the job.

No doubt this policy accounts very largely for the unusually good condition of all parts of the St. Louis school plant.

The Auditor's Office

The auditor is in the first place the chief accountant of the Board of Education. It is also his duty to certify all claims against the Board as having been legally incurred and duly authorized.

All the major items of expenditure of the Board have to do with such matters as pay rolls of the various departments, contracts for buildings, contracts for supplies, etc. Consequently, except at the meeting in July when the budget for the year is adopted, there is apparently little business coming before the Board for authorization. A very large percentage of the business of the year, expressed in financial terms, is done upon the certificate of the Auditor's office that the expenditures or purchases have been authorized by the Board. The reader will observe that this practice greatly facilitates the payment of bills and is in sharp

contrast with the practice often found, by which bills are held up many weeks or even months until the full Board can laboriously pass upon each item of expenditure.

The Supply Commissioner's Office

No supplies may be purchased unless specifically authorized by the Board except, however, that when in the opinion of the Supply Commissioner an emergency exists he may purchase supplies upon the requisition of the head of the department, approved by the auditor, to amounts less than $50.00 in price.

Supplies are defined to be of textbooks, reference and supplementary reading books, maps, globes, drawing models, and other apparatus, furniture, and articles of personal property belonging to the Board and not in actual use or course of consumption, except property intended to be permanently fixed to the buildings or grounds or installed as an appliance or part of any heating or ventilating plant. When the Instruction Department or the Building Department, or any other needs any of the material defined as supplies, and the Board has sanctioned the purchase of the same either by general contract or in the specific instance requisition is made upon the Supply Commissioner, and he buys the goods.

Purchase of Supplies. During the month of March of each year, the Supply Commissioner prepares and submits to the Board through the Committee on Auditing and Supplies a complete schedule of the supplies which, in his judgment, will be required during the ensuing fiscal year, July 1 to June 30, together with estimated quantities and cost.

On adoption of the schedule, the Supply Commissioner advertises for bids, and bids are filed and contracts let under very careful precautions as to propriety and procedure. In

this way supplies of all kinds are bought in very large quantities and at a price which, in the judgment of the various members of the Survey staff, is very low.

Inventory. After the close of the school year the Supply Commissioner causes an inventory to be made of all supplies on hand, and same is made a matter of permanent record.

Issuance of Supplies. No supplies are furnished except upon written requisition. In the case of educational supplies or equipment such requisitions must be signed either by the Superintendent of Instruction or by the principal in charge of the school for which supplies are required. In the case of operating supplies, requisitions are signed by the Commissioner of School Buildings, or by the principal, or by the janitor with the approval of the principal, or in vacation time by the Custodian of the building.

For all supplies issued duplicate sheets are prepared, one of which is issued to the person entitled to receive the supplies and the other is kept on file in the Supply Department as a voucher. In the case of textbooks, the Supply Commissioner must require of principals annually in June, accounting of the number of texts in their hands in the several schools, and if the number of books does not check up with the record of books issued to that school, principals must account for the missing books or show cause of their loss or destruction.

Each principal is required to keep an account of all supplies of books received and also of the manner in which such books and supplies have been distributed to different schoolrooms in the building.

Warehouse. The Board maintains an extensive warehouse in which supplies on hand, or not issued, are stored, and in connection with the warehouse maintains a regularly organized force of delivery trucks. There is also maintained

a book bindery for the rebinding of worn texts and other similar material. The warehouse and bindery are under the direction of the Commissioner of Supplies.

The Attorney

The Attorney is paid an annual salary and ranks as an executive officer of the Board. He is the Board's legal adviser. As such his office is essentially parallel and coördinate with those of the Superintendent of Instruction, the Secretary and Treasurer, the Auditor, the Commissioner of Buildings, and the Commissioner of Supplies. The Attorney is required to be vigilant in protecting the legal interests of the Board of Education, to represent the Board of Education at the courts, and to conduct the various items of legal business which constantly accrue in a system of this size.

The work of the Attorney's office is of three general classes:—

(1) Legal advice to the Board especially with reference to the adoption of new regulations. All new regulations are submitted to the Attorney for scrutiny with reference to their legal validity.

(2) The conduct of cases in court.

(3) Legal matters involved in the numerous leases and contracts of the Board, and especially the examination of the records of the state courts in the city of St. Louis for the purpose of determining the amount of the fees and penalties to which, under the constitution and laws of the state the Board is entitled.

Summary

(1) The Public School System of St. Louis is governed by a Board of Education chosen at large by the people. The powers of the Board of Education are granted to it by

Charter, and, in general, the Board has such corporate powers as are possessed by school districts in the State of Missouri.

(2) The Charter itself makes an accurate discrimination between those duties which are essentially legislative and those which are essentially of executive character, apportioning the former to the Board and reserving the latter to the officers of the Board, subject to final ratification by the Board.

(3) There are six executive officers who act as expert advisers to the Board and professional executives of the Board's acts and resolves. They derive their powers directly from the Charter. The heads of these executive departments are appointed by the Board for terms of four years except in the case of the Auditor, whose term is two years. Their salaries are fixed by the Board, and the same may not be decreased during their term of office.

(4) The Superintendent of Instruction and the Commissioners of Buildings and Supplies are made responsible for the efficient conduct of the actual work of the Board by being given full powers in relation thereto. The Secretary and Treasurer and the Attorney are held to a similar accounting so far as possible by a similar device.

(5) On its executive side the School Department has no single head, but rather four distinct heads, who administer distinct separate departments, but whose work is unified in part by periodical and by occasional conferences, and in part by provisions of the Charter or provisions of the regulations foreseeing the most likely points of overlapping and waste and providing appropriate preventive measures therefor.

The organization of the School Department of the City of St. Louis is unusual and amongst the largest cities of the country unique. It is built upon a Charter which both in

legal structure and in its embodiment of the best accepted principles of efficiency in school administration and government is remarkable. As a result, for a period of years longer than is necessary for a child to receive the utmost educational privileges that the city can offer, the school system has been carried on with efficiency, with harmony and dignity, rejoicing in the confidence of the people and in the respect of the other great cities of the Union.

CHAPTER III

THE APPOINTMENT OF TEACHERS AND TEACHER TRAINING

By Chas. H. Judd

Summary

This chapter describes briefly the methods of appointing teachers and comments on the advantages of having these appointments made through the Superintendent.

Since the elementary teachers are all trained in Harris Teachers College, the activities of that institution are described in some detail. Attention is called to the great service which the institution renders for teachers in service as well as for the teachers in training. Especially the class for principals is of great importance to the school system.

The second half of the chapter is devoted to an exhibition of certain of the facts about St. Louis teachers collected by the Carnegie Foundation.

THE APPOINTMENT OF TEACHERS AND TEACHER TRAINING

Under the Charter, appointments to teaching positions in St. Louis schools are made on nomination of the Superintendent. There is every evidence in the quality of the teachers and in the character of their work that this power is exercised to the exclusion of any political interference or outside influence in making these appointments.

The routine of appointing elementary teachers is managed almost entirely through the Harris Teachers College. The Superintendent thus secures the advice of competent critics before recommending candidates for positions in the grades.

In appointing high-school teachers the procedure is different because there is no city training institution which can supply the type of information which Harris Teachers College furnishes regarding candidates for elementary positions. When a vacancy arises in one of the high schools, a file of applications is the first source of information. This file is kept up through correspondence with various institutions which train high-school teachers and through inquiries which come to the Superintendent's office from candidates who ask to be considered. Each application is supported by full records of work done and by testimonials. In selecting high-school teachers there are no limits placed on the sources from which the Superintendent may select.

From the application files the principal and the assistant superintendent in charge of high schools select the most promising candidates and from this tentative list one is chosen.

This brief report on teachers may properly include a discussion of Harris Teachers College.

Harris Teachers College

The influence of Harris Teachers College in the St. Louis school system is unique. In order to understand the relation of this institution to the school system as a whole, it is important to recognize first of all the fact that there are not enough trained teachers in the United States to meet the demand created by school positions. Various rough calculations have been made in the effort to determine what proportion of the teachers of the United States are trained in normal schools or other institutions that give technical preparation for the teaching profession. Probably not more than 20 per cent of all the teachers are thus technically trained. To be sure, the cities fare somewhat better in this respect than do the rural communities, and St. Louis would in any case be able to secure from the State of Missouri and from neighboring states a fair supply of technically trained teachers, even if it did not undertake to train teachers through its own training school or Teachers College. But the amount of energy that would be expended on the part of supervisory officers in looking up candidates would be very large. In many school systems the chief energy of the superintendent is expended in finding teachers. Where the routine machinery of a school system demands as much attention as is necessary to keep the St. Louis system organized, it would be a very exacting demand on the superintendent to organize the agencies for securing and examining outside teachers. New York has certain training agencies, as does the city of St. Louis, but for that system the training schools are inadequate and New York has to maintain an examining board which spends a large amount of time in dealing with candidates for admission to that system. The expense of Teachers College, therefore, is in part offset by the elaborate machinery for seeking out and admitting to the system elementary teachers. Most of the

teachers who are now entering the St. Louis system for work in the elementary grades are prepared by the Harris Teachers College. St. Louis is thus providing trained teachers for the public schools and is at the same time contributing to the large work which is so inadequately done throughout the country, namely, the work of providing enough technically trained teachers.

The course of study in the Harris Teachers College covers two calendar years. During the first year the young women who enter the classes from the high school are given courses in methods which deal directly with the course of study as administered in the elementary schools of St. Louis. They thus become acquainted with the textbooks which are used in the schools and with the methods and devices that are employed in carrying on the work of these schools. During the first semester of the second year these candidates, now thoroughly trained in the content of the St. Louis schools, go out as apprentice teachers into the elementary schools of the city. Here they come in contact with the practical machinery of the schools. The principals have an opportunity to pass on their qualifications and to become acquainted with the candidates who are later to be presented to them for appointment in their schools. The apprentices on their side are given an opportunity to come in contact with the children and to deal with the problems of classroom organization and instruction. After a half year of contact with the classroom situation these apprentices go back again to Teachers College, where they receive another half year of somewhat more general training. This more general training is well placed, because the students know from personal contact the school problems that arise in the classroom.

During the year of apprenticeship and advanced work the school system has had an opportunity to pass judgment from a number of different quarters on the qualifications of a candidate. The assistant superintendents see the appren-

tice teachers and pass judgment on their qualifications. Various principals pass on each of the candidates, so that there accumulates at the Teachers College a very complete record of definite judgments passed on the candidates. The probability of failure on the part of one of these candidates after passing through this critical scrutiny is very small.

Two comments of a critical type ought perhaps to be made with regard to this training and with regard to the methods that are adopted in carrying it out. In the first place, as contrasted with many normal schools the amount of academic study which is required of these candidates is relatively short. Most normal schools do not spend a full semester in practical classroom work, but give more academic training. In view of the large number of candidates now available for the openings in Teachers College, it would seem desirable for the city to consider some extension of the course of study required of these young women before they are admitted to the schools.

In the second place, the city has for some years made a payment of one hundred dollars to each candidate during the apprentice period. This payment aggregates the large sum of ten thousand dollars. The question arises whether it is desirable to pay candidates who are in training for the position of teacher. In general, it has not been the practice of public institutions in this country to subsidize candidates even to the small extent represented by this payment. It would probably be better to utilize the funds that would be released from a termination of this payment in extending the opportunities offered by the Harris Teachers College.

On the other hand, it should be reiterated, as is pointed out in the detailed reports of Mr. Mirick and other members of the survey staff that the training given to these young women is of a very high order. They do excellent work in the schools, and the city of St. Louis undoubtedly secures

through this means candidates who are very much more directly trained for the work of the St. Louis schools than could possibly be secured in any other way.

There is some danger that St. Louis girls will not get the variety of contact with school methods that they might secure if they went away from home for their normal training. But this danger is reduced to a minimum because of the rich course of study which is offered at Teachers College. It remains an open question, however, whether it would be better to secure from time to time for the system a larger number of experienced teachers from outside. These outside teachers would disturb somewhat the equilibrium of the course of study. Such a disturbance might conceivably operate to produce an undesirable disintegration in the course. On the other hand, the chances are very large that suggestions would come through the importation of outside teachers which would be of much advantage in reorganizing the work of the schools.

Thus far we have commented on the activities of Teachers College in training new teachers who are to come into the system. The activities of the institution extend, however, far beyond this function of training new teachers. The College offers a large number of courses for teachers in service and there is a Saturday morning class conducted by the principal of the Teachers College which includes a number of the principals of elementary schools and has become a forum for the discussion of the problems of the whole system. There can be no question whatsoever about the wisdom of organizing continuation courses for teachers in service. It used to be assumed that a teacher who entered the teaching profession with sufficient knowledge to pass the entrance examinations was qualified to go on for all time conducting classes in the elementary grades. With the increase in the complexity of the course of study, however, and with the rapid growth in educational ideals which has led to a constant revision and enlargement of the course

of study, it has become obvious that no teacher can prepare at the beginning of life to be a successful teacher during the rest of her years without continued study.

The methods of securing continued study are various. Some school systems require continued study for promotion and secure such study only on the part of the most aggressive teachers. Others require continued study in the form of teachers' meetings which are presided over either by the principals of school buildings or by the assistant superintendents. Other school systems encourage reading circle work or attendance or miscellaneous teachers' gatherings. None of these devices can be compared in efficiency with the device of having from time to time well organized, definite courses of study along continuation lines. The fact that a large number of St. Louis teachers are taking the various extension courses offered in Teachers College makes it clear that the system of continuation training is working successfully. Without creating antagonism on the part of the teachers through the enforcement of arbitrary requirements, the administration of the St. Louis schools is keeping alive among the active teachers a spirit of study and progress.

Not only so, but the city gains very great advantage from the discussions carried on by the principals' class. The grave dangers that arise when the principals of schools become negligent and give up study cannot be overemphasized. Many a school system is lacking in progress in all of its branches very largely because the principals of schools are unprogressive. The habit of many school systems is to appoint the oldest teacher in the building to succeed to the principalship whenever there is a vacancy in that office. The result of such a program of appointment to the principalship is that the office is filled with people of worthy motives, but very little special training. The principal becomes a kind of retired teacher rather than active head of

the school. What is really needed and what is very commonly supplied in St. Louis is a definite special training for the principalship and a clear recognition of the difference between the function of supervision and the function of classroom instruction. St. Louis has for years followed the practice of importing into the system vigorous young people who have made a special effort to prepare themselves for the duties of supervision. A principal ought to be able to use statistical methods of comparison in dealing with the attendance in his different grades. He ought to be prepared to supervise the teaching staff by way of suggesting new methods of work and he ought to know how to test the work of the teachers. Just as in all kinds of business organization the problem of organization is entirely different from the problem of operation, so in schools the problem of supervising and organizing a building is very different from the problem of organizing a class. It does not follow that a good teacher will make a good principal. The problem of the principal differs radically from that of the teacher.

These comments with regard to the principals will serve as a background for the emphatic commendation of Harris Teachers College in its organization of the principals into a class for regular and intensive study of supervisory problems. The school system has followed an enlightened policy in securing principals who will be interested in getting together frequently for discussion of school problems and the school system is especially fortunate in being able to provide a regular meeting under proper guidance where scientific studies can be initiated and can be subjected to vigorous co-operative criticism.

The money value of Teachers College to the St. Louis system is very hard to calculate. The educational influence of this institution was observed everywhere throughout the

system. The young teachers who had just come into the schools had passed through a thorough course of training. Teachers in service find large and increasing opportunity to keep themselves intellectually alive and the College becomes a natural center for a discussion of administrative problems.

The Teachers in Service

For the remainder of this section of the report the survey is under obligations to the Carnegie Foundation. The Foundation is engaged in a survey of all the institutions in the state of Missouri which train teachers. In addition a large body of information has been collected regarding the teachers in active service throughout the state. Much of the material which will be used for that survey is not yet tabulated. The following tables selected from a collection relating to St. Louis give information that will show the character of the St. Louis teaching body. The St. Louis survey acknowledges the courtesy of the Carnegie Foundation in supplying these tables. They were prepared by Mr. H. W. Josselyn in connection with the Foundation's study. It ought perhaps to be added that the Carnegie Foundation is in no wise responsible for the comments which are here appended to the tables.

The facts with regard to teachers' salaries are set forth in the financial section of the report and need not be repeated here. These salaries for both elementary teachers and teachers in high school are average.

Further information regarding finances are as follows: 1291 out of 1638 elementary teachers and principals state that they are entirely dependent on their salaries. 141 have other resources. 206 give no information.

The following table shows the number of teachers and principals who have others dependent on them for support together with the number of such dependents:

374 report no dependents
282 report 1 dependent
275 report 2 dependents
135 report 3 dependents
79 report 4 dependents
43 report 5 dependents
17 report 6 dependents
23 report 7 or more dependents
410 give no information

This last table shows that a very large number of woman teachers are supporting families. They are, all told, only 73 men in the total of 1638 reporting.

Supplementary salaries are earned by these principals and teachers as indicated in the following table:

678 report no supplementary earnings
48 report from 3 to 50 dollars
34 report from 51 to 100 dollars
68 report from 101 to 150 dollars
43 report from 151 to 200 dollars
28 report from 201 to 300 dollars
28 report from 301 to 400 dollars
10 report from 401 to 500 dollars
4 report from 501 to 600 dollars
3 report from 601 to 650 dollars
1 reports 2100 dollars
1 reports 5000 dollars
692 give no information

These figures should be kept in mind when teachers' salaries are under discussion. St. Louis has made progress in recent years in the matter of adequate payment of teachers. Salaries have several times been increased, but the facts tabulated show, first, that a considerable body of teachers seek additional employment either in the summer or during the year and, second, that many of them carry a heavy economic burden.

Even more striking are the tables referring to high-school teachers:

67 report no dependents
74 report 1 dependent
68 report 2 dependents
41 report 3 dependents
37 report 4 dependents
12 report 5 dependents
9 report 6 or more dependents
46 give no information

With regard to additional salaries the reports are as follows:

75 earn nothing extra
17 earn from 5 to 50 dollars
7 earn from 51 to 100 dollars
27 earn from 101 to 200 dollars
43 earn from 201 to 300 dollars
23 earn from 301 to 400 dollars
25 earn from 401 to 500 dollars
7 earn from 501 to 600 dollars
4 earn from 601 to 700 dollars
8 earn from 701 to 800 dollars
2 earn from 801 to 900 dollars
5 earn from 901 to 1000 dollars
7 earn more than 1000 dollars
104 give no information

Most of the elementary teachers were trained in St. Louis. The facts regarding high-school training may be summarized briefly as follows:

1287 received high-school training in St. Louis
83 received high-school training in other cities of Missouri
43 received high-school training in Illinois
7 have no high-school training
152 give no information
66 received training in other states than Missouri or Illinois

This shows how completely St. Louis draws it elementary teachers from its own high schools.

Indeed, the matter goes even further. 992 out of the 1638 reporting were born in St. Louis and 171 more were born in other cities in Missouri.

These figures go far to prove that St. Louis must be active within the system itself in providing courses for the training of its teachers. They leave an impression also that the system must take steps to import ideas the more vigorously because it imports so few people.

The parentage of the elementary teachers is a matter of great interest. The following tables give the facts for elementary principals and teachers:

Nationality of Mother

Men—73			Women—1565		
American	40		American	729	
German	9		German	223	
English	7		Italian	3	
Irish	3		Irish	205	
Scotch	6		English	83	
French	2		Scotch	30	
Scotch-Irish	1		Hungarian	4	
German-American	1		German-American	2	
Negro	1	70	French	25	
			Swiss	7	
No information	3	3	Austrian	2	
			Danish	3	
Total		73	Scotch-Irish	14	
			German-Dutch	1	
			Canadian	6	
			Russian	1	
			Irish-American	3	
			Mixed	2	
			Dutch	3	
			Scotch-English	3	
			American-Jew	1	
			Swedish	3	
			Bohemian	3	
			Slav	1	
			English-American	1	
			French-German	2	
			Brazilian	1	
			Scotch-American	1	
			Welsh	1	
			Negro	68	
			West Indian	1	
			Indian	2	
			Irish-Negro	1	
			American-Negro	1	1437
			No information	128	128
			Total		1565

Nationality of Father

Men—73			Women—1565		
American	40		American	629	
German	7		German	270	
English	7		Irish	224	
French	3		English	98	
Irish	4		Scotch	37	
Norwegian	1		German-American	2	
Scotch	3		Italian	2	
English-Irish	1		Swiss	11	
German-American	1		Austrian	5	
Canadian	1		Danish	4	
Negro	2	70	Canadian	3	
			French-Canadian	1	
No information	3	3	French	27	
			Jewish	1	
Total		73	German-Jew	1	
			Russian	1	
			Scotch-Irish	9	
			French-English	1	
			Dutch	5	
			Madagascan	1	
			Swedish	5	
			Scotch-Canadian	1	
			Hungarian	2	
			Roumanian	1	
			Welsh	2	
			Belgian	2	
			French-American	1	
			Irish-American	2	
			Bohemian	1	
			Alsatian	1	
			Norwegian	1	
			Spanish	1	
			English-American	1	
			Mixed	2	
			Negro	70	
			Mulatto	2	
			American-Irish-Negro	1	
			Irish-Negro	1	1429
			No information	136	136
			Total		1565

The ages of the elementary teachers is interesting because it shows that the teaching body is made up in unusually large measure of young women. Many of these have been trained in Harris Teachers College.

AGES OF ELEMENTARY PRINCIPALS AND TEACHERS

Ages	Number of Men	Number of Women
19—20	0	24
21—25	6	327
26—30	4	211
31—35	13	149
36—40	5	143
41—45	10	94
46—50	8	60
51—55	8	30
56—60	10	23
61—65	2	8
66—70	4	2
No information	3	494
Total	73	1565

The years of experience of the elementary principals and teachers are given in the following table. It appears from this table that much less than half of the teachers have had more than ten years of experience. This fact is favorable insofar as it gives promise of greater flexibility of thought and greater willingness to take up new practices. But it shows, on the other hand, how vigilant the school system must be in providing training for its teachers in service, for teachers who have had only short experience are in need of guidance.

EXPERIENCE OF TEACHERS IN ST. LOUIS SCHOOLS

Number of Years	Actual (Number of Years)	Estimated (Given Number of Years or More)	Total
1	97	38	135
2	111	29	140
3	85	13	98
4	62	15	77
5	54	12	66
6	53	13	66
7	43	12	55
8	40	12	52
9	25	14	39
10	54	286	340
11	18	15	33
12	17	12	29
13	12	7	19
14	16	11	27
15	10	20	30
16	8	5	13
17	6	3	9
18	4	7	11
19	2	9	11
20	12	8	20
21	3	5	8
22	8	7	15
23	5	2	7
24	1	4	5
25	7	12	19
26	2	3	5
27	1	1	2
28	3	2	5
29	1	1	2
30	2	3	5
31	1	..	1
32	2	1	3
33	..	1	1
34	1	..	1
35	1	1	2
36	1	2	3
40	2	1	3
41	2	..	2
Total	772	587	1359

No information 279
Total 1638

A number of questions were asked on the Carnegie blanks which bring out the spirit of the teaching staff with great vividness. The following tables exhibit the answers to three such questions:

B—Supposed to follow course of study minutely?

Best of ability	15	
Conscientiously	9	
Freedom allowed	8	
Partly	10	
Meet needs	16	
No	417	
Sometimes	5	
Question	1	
Yes	594	1075
No information		482
Principals' cards		81
Total		1638

C—Encouraged to try plans used elsewhere?

No	131	
Occasionally	2	
Optional	3	
To certain degree	4	
Yes	912	
Question	5	1057
No information		500
Principals' cards		81
Total		1638

D—Encouraged to originate plans of your own?

Not always	3	
No	100	
Question	2	
To certain extent	4	
Yes	980	1089
No information		468
Principals' cards		81
Total		1638

The answers require very little comment. Evidently the course of study as laid down is a strong influence in guiding teaching. This fact is especially significant at a time when the course of study is in process of reconstruction.

Equally eloquent is the testimony that in most cases the initiative of the teacher is given large play.

With regard to the teachers in the high schools the following information appears in the tables of the Carnegie Foundation.

Of 354 high-school officers 78 were born in St. Louis, 22 in other parts of Missouri, and 48 in Illinois.

As we should expect from the mode of their appointment, a much larger proportion of the high-school teachers come from other states. The following is a partial list:

Ohio	supplies	31
Indiana	supplies	19
Pennsylvania	supplies	19
Iowa	supplies	16
Michigan	supplies	15
New York	supplies	12
Wisconsin	supplies	8
Canada	supplies	6
Germany	supplies	5
Tennessee	supplies	5

Twenty-nine states and foreign countries supply the rest.

The following table showing the ages of the high-school teachers indicates that the men as a body are younger than the men in the elementary schools and the women are older. These contrasts are explained by the longer training required on the part of the women to secure admission to the high schools and by the fact that most of the men in the elementary schools are principals.

Ages of High School Teachers

Ages	Number of Men	Number of Women
21—25	13	15
26—30	31	33
31—35	48	34
36—40	46	16
41—45	24	15
46—50	13	10
51—55	3	4
56—60	3	4
61—65	3	3
No information	7	29
Total	191	163

The nationalities of the high-school teachers are shown in the following tables:

NATIONALITY OF MOTHER

	Men	Women	Both
American	89	96	185
Canadian	1	6	7
Dutch-Welsh	1	..	1
Dutch	1	..	1
English	18	11	29
English-American	2	1	3
English-German	1	..	1
French	1	2	3
French-Irish	..	1	1
German	28	9	37
German-American	1	1	2
Irish	8	13	21
Italian	1	..	1
Indian-Scotch-African	..	1	1
Hungarian	1	..	1
Negro	20	9	29
Norwegian	1	..	1
Russian-Jew	..	1	1
Scandinavian	1	..	1
Scotch	1	5	6
Scotch-Irish	2	..	2
Swedish	3	..	3
Swiss	2	..	2
	183	156	339
No information	8	7	15
Totals	191	163	354

NATIONALITY OF FATHER

	Men	Women	Both
American	89	98	187
Canadian	..	2	2
English	12	12	24
English-American	2	..	2
English-Irish	..	1	1
Dutch	1	..	1
French	2	4	6
German	32	19	51
German-Irish	1	..	1
Indian-French-African	..	1	1
Italian	1	..	1
Irish	3	7	10
Hungarian	1	..	1
Jamaican	1	..	1
Norwegian	1	..	1
Negro	19	9	28
Russian-Jew	..	1	1
Scandinavian	1	..	1
Scotch-Irish	4	1	5
Swedish	3	..	3
Swiss	4	..	4
Scotch	6	3	9
	183	158	341
No information	8	5	13
Totals	191	163	354

The following table shows that the great majority of the high-school teachers have had advanced training in higher institutions. The few who have not are teachers in special subjects.

EDUCATION OF HIGH-SCHOOL TEACHERS

I.	University or College Training	226
II.	University or College and Normal Training.	50
III.	Normal Training	39
IV.	High-School Training Only	20
V.	Special Schools	19
	Total	354

The foregoing tables confirm in detail comments which have been made in various sections of the report. The teachers are adequately trained both by institutional courses and by experience. They are as a class alert and efficient. They are receiving average salaries.

Again it may not be improper to reiterate the plea which has been made above for more training for teachers in service. The youth of many of these teachers suggests the desirability of continued instruction. The city is responsible for a very large part of the training which most of the elementary teachers have received and must face the responsibility of keeping the whole staff intellectually alive by such devices as it has wisely adopted in the extension courses in Harris Teachers College.

RECOMMENDATIONS

It is recommended that the work of Harris Teachers College be enlarged.

It is recommended that payments to apprentice teachers be discontinued.

It is recommended that the policy of encouraging continued study on the part of teachers in service be strengthened.

CHAPTER IV

CONSTRUCTION OF THE ST. LOUIS SCHOOL BUILDINGS

By W. R. McCornack

To the city of St. Louis belongs the credit for having done more during the past twenty (20) years to improve the standard of school buildings, than any other city in America.[1]

A careful examination of the buildings indicates that they are unusually well constructed, that good materials have been used, that they are far above the average, architecturally, with charming surroundings, with all engineering features skillfully handled, and that the citizens from all walks of life in the city of St. Louis are conscious of the beauty of the buildings and surroundings, and are glad to testify to the fact to the stranger within its gates. This fact is ample evidence of the influence of well built and beautiful buildings on any community.

The buildings will be discussed in detail in the following pages with the intent of giving both satisfactory and unsatisfactory features equal prominence.

It must be borne in mind that the suggestions and recommendations are based on the experience of others outside of St. Louis, and are presented with the idea that the particular suggestions and recommendations will be carefully considered from the standpoint of local conditions in the educational sys-

[1] New York is exempt from comparison because of the different problems faced, owing to the size of the city.

tem, as it now is or as it may be modified. Details will be supplied in the later sections of this report comparing the newer school buildings of several of the leading cities of the country.

TYPE OF BUILDINGS.

For the purposes of this survey the school buildings of St. Louis are divided into two general classes, as follows:

Type A—The buildings erected from 1866 to 1896. (See plate 1.)

Type B—The buildings erected from 1896 to 1916. (See plate 2.)

The buildings of type A are such plants as Adams, Ames, Bates, Blair, Carondelet, Chouteau, Clinton, Crow, Divoll, Garfield, Hodgen, Irving, Jefferson, Longfellow, Marquette, Pestalozzi, Riddick and others, or approximately 42 in number.

In brief these buildings may be described as non-fireproof structures without any particular architectural merit. When built their main structural features were brick walls, and wood joist floor construction. The heating plants were of the furnace type and the window lighting bilateral. They were distinctly non-fireproof.

Quite recently the Board of Education appropriated $750,000.00 to render these buildings fireproof. This was done by tearing out the wood stairs and corridors and replacing them by concrete, and in addition cutting off all communication between the boiler room and the balance of the basement.

This work was done very effectively and very materially adds to the safety of the buildings. While the work was being done the question of fire doors, sometimes called smoke screens, should have been considered in connection with the stairways. These would act as safeguards in case of a fire, and prevent a volume of smoke from reaching the stairways, as the danger in a fire is largely from panic, due to smoke.

PLATE 1. TYPE A.—MARQUETTE SCHOOL

PLATE 2. TYPE B.—MULLANPHY SCHOOL

The old system of furnaces has been practically done away with, and a more modern system installed. These installations were well done and the expenditure wise, not only on account of the saving of fuel, but from the point of view of lessening the fire risk and more effectively heating the building.

The buildings and grounds were found to be in excellent condition, indicating not only that the maintenance of the buildings is well attended to, but that the janitors keep them clean.

The toilet rooms were well ventilated and clean.

The buildings of this type as a general thing, were very carelessly constructed, and in all probability show a large cost of maintenance.

The section of the report dealing with this type of building is necessarily brief, as the object of the survey is to deal chiefly with what shall be done in the future, and there are no features in these buildings which should be perpetuated.

Briefly the buildings of this class were found to be poorly constructed, but well kept up, well safeguarded as to fire risk, and kept in a satisfactory sanitary condition.

TYPE B—SEE PLATE 2 AND FIGURE 3.

Among the buildings of this type are such structures as Arlington, Ashland, Blow, Bryan Hill, Carr, Clark, Clay, Cote Brilliante, Eliot, Fanning, Farragut, Froebel, Franklin, Glasgow, Harney Heights, Hempstead, Henry, Humbolt, Jackson, Laclede, Lafayette, Lyon, Madison, Marshall, Meramec, Monroe, Mullanphy, Shaw, Shepard, Sherman, Sigel, Webster, Wyman, Delany and Simmons, or approximately 48 in number.

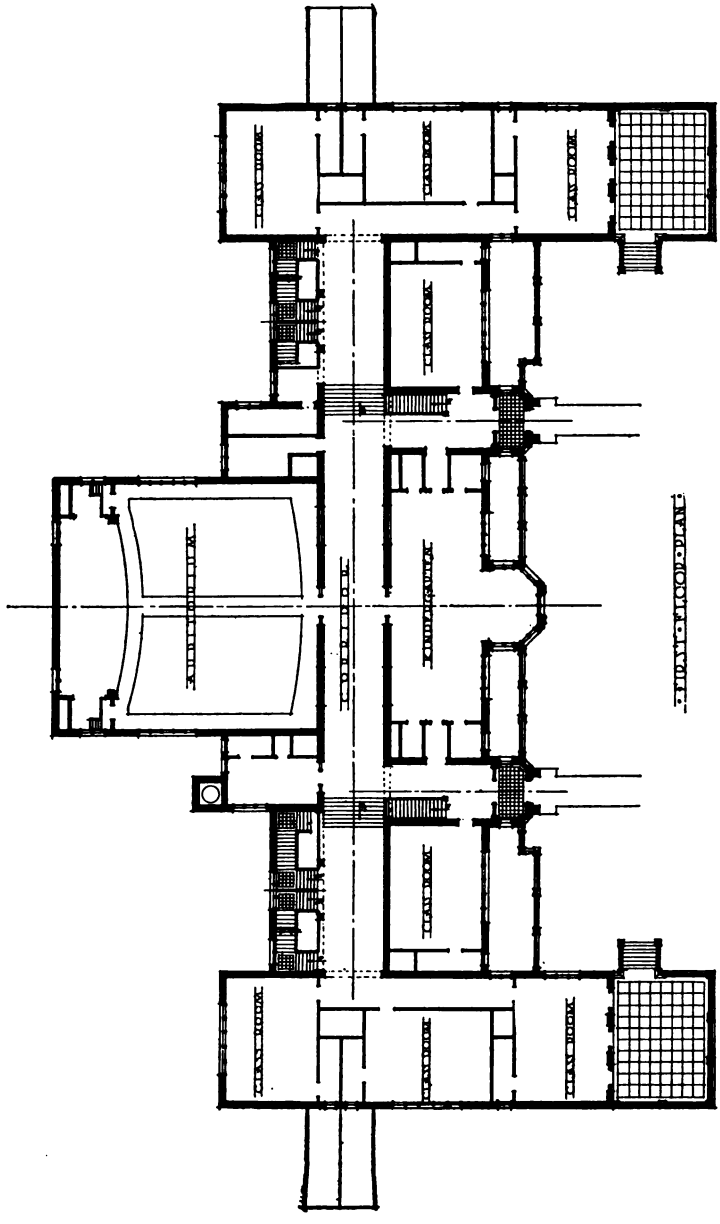

FIGURE 3.—PLAN OF THE BRYAN MULLANPHY SCHOOL

Description of Buildings.

The typical modern St. Louis school may be described as a two-story building with a basement. The buildings are as a whole, of a better architectural merit than those of any other city in this country. The architectural appearance of the building is enhanced by the roof which is of the hip type.

Good taste is shown in the selection and use of building materials.

The plan is generally rather extended in length with a large kindergarten in the center. The buildings as a rule have no special room features, except the large kindergarten, with one or two exceptions where an assembly room is included. In brief the buildings in general, contain a group of class rooms generally about twenty (20) in number with the necessary toilets and playrooms, but with no other special features.

In many cases there are four playrooms.

Safety. The buildings may be considered fireproof although the building code of the city of St. Louis is apparently less strict than those of many of the cities with which it is being compared, as St. Louis apparently is permitted to use wood roof trusses and is not compelled to enclose all stairways in metal and wired glass fireproof partitions, nor are as large stairways required as other city building departments demand.

Heating and Ventilating. This system in brief is an indirect system, with low pressure, down draft boilers, low pressure steam engines, fans, air washers, and individual ducts. The system is very economical and effective.

Sanitation. The plumbing fixtures are fortunately of the individual type instead of the very wasteful and unsanitary range type still in use in some school systems.

The toilet rooms are very sanitary and well ventilated.

The buildings as a whole are well kept and clean.

Quality of Construction. The materials and workmanship are of the first quality and too much cannot be said in praise of the necessity of continuing the policy.

Detailed Description. The sites, buildings, equipment and surroundings will now be discussed in detail and criticisms and recommendations noted.

Sites. Method of purchase. The policy of purchasing sites in the early stages of the real estate development of a section of a city is very wise, and care should be taken to purchase the maximum area.

Such a policy pursued in other cities would prevent building sites being wholly occupied by the building itself, with no residue for playground.

Portables. The use of portables in the early stages of the development of a district is a good policy.

This policy may sometimes prevent the erection of a large structure in an undesirable location. It also will allow the erection of a structure to be postponed until such time as the population grows to the point where a larger building is justified.

The Corlett School in Cleveland, is an example of a neighborhood outgrowing a building. An eight-room structure was built, and by the time it was occupied it was entirely too small to accommodate the pupils.

A portable center established for two years would have prevented the erection of the small building. An annex was necessary at the end of the second year of occupancy.

Location in the District. The buildings appear to be quite centrally located in their respective districts.

In locating a new building, a careful study of the surrounding districts should be made to determine the possibility of locating a building in such a manner as to foresee a structure large enough to accommodate any overflow from adjoining school plants. For this reason buildings located somewhat off center in the district can be justified.

Location on Street Car Lines. While the noise of traffic is usually an argument against locating a school building on a car line, yet statistics show that all the accidents that have happened to school children in Cleveland, have been while crossing car lines or streets away from the school, and never on the car lines which pass the building, for the reason that a traffic officer is stationed at all school buildings at the time of arrival and departure from schools, and the children are required to pass the officer and obey his signals. In addition the officer warns them to be careful at all other street crossings which serves to remind the child of danger points.

Size of Site. The sites upon which the St. Louis schools are built are usually generous, and with the rapidly developing interest in physical education, large sites should be acquired.

Location of Buildings on the Sites. Many of the buildings are located very unfortunately for the retention of the proper playground area.

While the terraces in front of a building have value, yet in some cases the buildings might have been located closer to the street at a saving of area.

In the case of a plot of land of approximately 280′x450′ surrounded on three or more sides by streets, it is advisable to consider the type of a plan that will conserve as much of the area as possible for recreation purposes.

Figure 4 is an illustration of this point. The building outlined in black, shows a structure of the type of the present St. Louis schools, located on the long side of a site. The play space is divided and reduced in effectiveness for recreation purposes. The building indicated in heavy dotted lines is another type of building located in a manner to conserve the greatest amount of play space.

In some cases it is advisable to consider a three-story building rather than a two-story building, in order to save area for playground.

FIGURE 4

Illustration of two methods of locating buildings on a site.

"A" indicates a compact three-story type of building, containing 24 class rooms, and an Auditorium, located in such a manner as to leave a large portion of the site for playground purposes.

"B" indicates a two-story building of the Bryan Mullanphy type, containing 24 class rooms and an Auditorium, located in such a manner as to break the play surface into two sections.

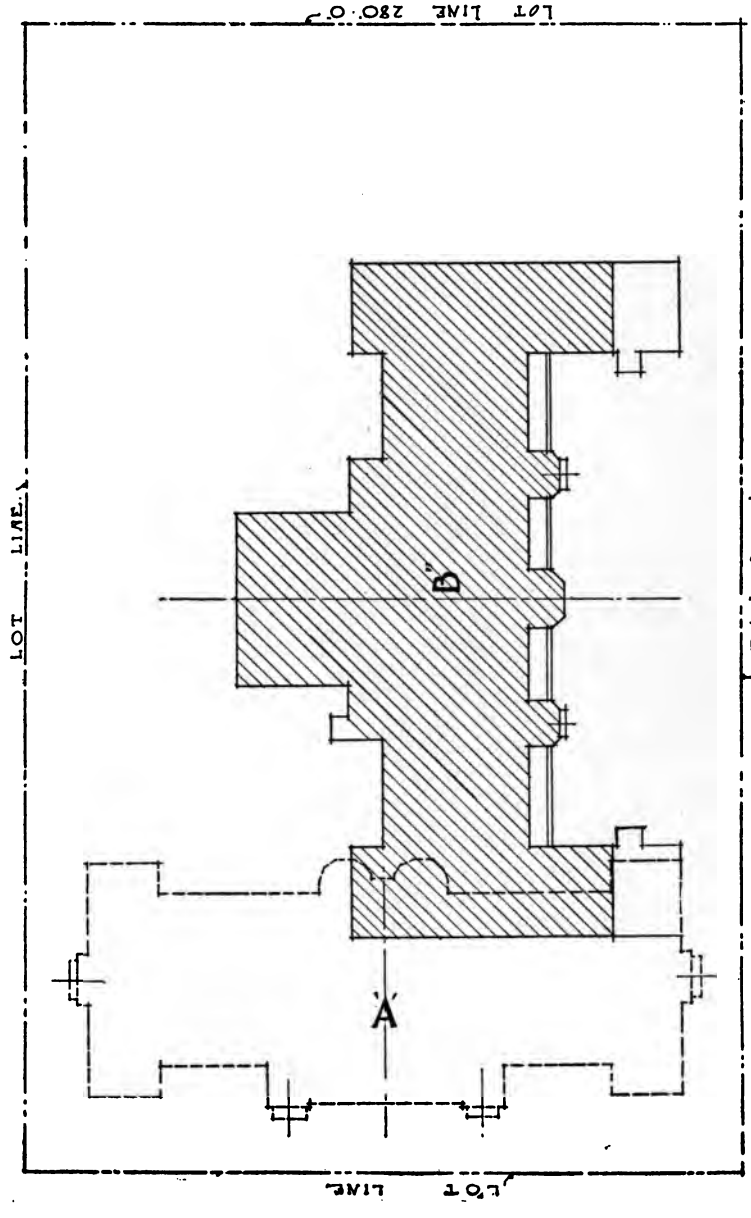

FIGURE 4

Formal Planting. A very pleasing feature of the St. Louis schools, is the very successful formal planting. The number and kind of shrubs, trees and hedges are very carefully selected, and are very successfully maintained.

The terraces are an attractive feature and indicate an intelligent solution of the problem as the excavated material is left on the site, and the expense of removing it is saved.

The planting and grading feature should be maintained.

In some cases, however, the amount of planting space in front of the building might be reduced, as the excessive planting area reduces the playground surface.

Playgrounds. The playgrounds were found to be usually of brick, and while the treatment has a cleanly appearance and reduces the dirt in the building, yet it is not suitable for play, and should be abandoned.

A limestone surface is used in Cleveland, and has proved a success, but the surface being experimented with at the Bryan Mullanphy School, which is a combination of limestone dust and sand, promises to be even better.

This should be a matter for experiment, however. Surface draining should also be considered.

Mention has already been made of the location of buildings on the site, in such a manner as to give the largest available play space possible. In this connection it is suggested that the building be located on the lot in such a manner as to permit of one large unrestricted playground, instead of separating it into two. Fig. 4 illustrates the point.

A large playground can always be divided by a fence or other barrier if necessary.

A portion of the terrace in front of the building might be developed into a small play space for kindergarten and first-grade children, as a separate play area for the small children has been found to be advisable.

Type of Plan. The typical St. Louis plan is what might be termed a fixed plan, containing but few special features.

Tables will be given in a later section comparing the schools of St. Louis with those of other cities.

It is suggested that St. Louis consider the advisability of studying a more elastic type of plan, which shall produce a low cubic contents per square foot of available school area, and that the plans be made so that they can easily be extended and developed as the educational policy may change.

It is not the purpose or the province of the report on buildings, to say that the educational policy shall change, but merely to suggest that since it has changed in other cities it may change here, and the plans should be studied in anticipation. Such a method of planning does not make the building any less adaptable to the present educational policy, but on the other hand renders it elastic enough to accommodate any policy.

Structural Features. The structural features of the buildings indicate that conservative engineering principles have been used in designing the structures. The wood roof trusses used are contrary to the laws of many states, but are of course an economy, and are not a fire risk in so far as the safety of the children is concerned. Concrete stairs in place of iron are probably an economy and are pleasing in appearance.

Location of Stairs. The stairs in a majority of the buildings are located on either side of the corridors instead of at the end. Stairs located at the end are easier to supervise, although it may be said in connection, that excellent discipline was found in all St. Louis schools, which does not render supervision of the stairs quite so important. Stairs located at the ends, however, will allow the corridors to be lighted from the ends which will permit of both sides of the corridor to be used for class rooms with a probable resulting economy in planning.

Recreation Spaces. The buildings are unusually well provided with playrooms. In many cases four are provided which

seems to be a waste of space. The floor space allotted to play rooms where two are provided seems to be ample. However, the height is not sufficient. It would be better if the ceiling height was increased to at least 16 feet and as many pipes as possible eliminated, in order to permit basket ball or indoor baseball to be played.

Kindergarten. The kindergarten rooms in the newer buildings are to be highly commended. These rooms cannot help but exert a splendid influence on the children when in the most impressionable period of life.

These splendid rooms located so near the entrance would serve the purpose of club rooms or reception rooms in case social service work should be included in the schools.

The decoration in these rooms is usually in good taste, and one room singled out for special decoration is all that can be justified in a building, owing to the expense.

The large kindergarten is justified on account of the number of children it will accommodate.

No economies can be suggested. Small toilets in connection with the kindergarten would be an addition which would prove an advantage.

Corridors and Lobbies. The table given in the earlier portion of the report indicates the widely varying amount of space devoted to corridors and stairs in the schools of various cities.

An examination of plans of the latest elementary schools in ten (10) cities, shows the following prevailing corridor widths:

Chicago	14′ to 15′
Philadelphia	12′
St. Louis	14′ to 16′
Boston	10′
Minneapolis	8′ to 14′
Pittsburgh	12′
Newark	10′
Detroit	14′
Cleveland	10′ to 12′
(Future corridors to be 10′)	
New York	8′

The school buildings accommodating the largest number of pupils are those of New York City, and these buildings have the narrowest corridors and smallest area devoted to stair purposes. Investigation proves that there is no confusion or congestion.

The double stair system in use in the New York schools is very economical of space.

The stairways in the Cleveland schools are the least economical of all the buildings examined. This defect is partly due to the law in Ohio relating to the width of stairways. An attempt will be made to utilize the New York double stairway system in order to reduce waste area.

It is suggested that the question of corridor widths and areas devoted to stairs be given consideration with respect to a saving of floor space.

It is not possible to estimate the saving in dollars and cents, but in any commercial enterprise, waste of floor space would be a major consideration, and a school should not devote more space to any single purpose than necessary.

Special Rooms. There are very few special rooms in the various buildings, and it is suggested that tentative provision be made at least for rooms to be used for Domestic Science and Manual Training. This was found to be a wise precaution in Cleveland.

In the Bryan Mullanphy school which has just been opened, work of this nature was being carried on this summer. Roughing in work of this sort should be considered in every elementary school in order to save expense in the future.

These rooms may be located in the basement to advantage.

Shortsightedness in this respect has caused Cleveland, and presumably other cities as well, much additional expense, due to tearing out floors and cutting walls.

Accommodations for Teachers. The laws of some states make it obligatory on the part of the school officials to provide suitable rest rooms and lunch rooms for teachers. Both of these features were generally either absent from a majority of the St. Louis buildings or were makeshifts.

The value of a lunch room with the proper kitchen facilities and a suitable rest room, which may also be a library or reading room, is unquestioned and consideration might well be given to these features. The degree of completeness to which they shall be carried is a matter for study.

Medical Inspection. Few adequate rooms or equipments are provided in the buildings for this very important adjunct of school work.

A room at least 16'x20' with adequate light, and equipped with a sink, should be provided. If possible, a waiting room should be adjacent to the room used for Medical Inspection.

The equipment of the room is not a matter to be discussed in this report.

Principal's Office. The Principal's Offices were found to be adequate in size and well equipped.

In a two-story building, the office should be on the first floor.

In a three-story building, the office is probably more satisfactorily located for supervision upon the second floor.

The Principal's office and Dispensary should be adjacent if possible, as the Principal should be in close touch with the doctor, dentist and nurse.

Auditoriums. There are very few Auditoriums in the elementary school buildings of St. Louis. This is a question that must rest absolutely with the judgment of the school officials, based on the absolute need for such a room. All that is necessary to comment upon here, is that the possibility of a future Auditorium might well be considered in preparing plans for new buildings.

Classrooms. 1. Size.—The rooms are approximately 24′x 30′ which corresponds with the size usually found in other cities.

2. Daylight.—The light in the newer buildings is unilateral and sufficient in quantity.

3. Colors on Walls.—The colors on the walls are a little dull in some of the rooms. Many school systems are conducting experiments to determine the best color for various exposures.

4. Seating.—The pedestal type of desk found in most of the rooms, seems to be very satisfactory and renders the cleaning of the room easy.

There seemed to be an abnormally large number of seats in each room. Apparently the pedestal type of desk is economical of floor space, as fewer seats are found in larger class rooms in other cities where other types of desks are used.

While the discussion of the number of pupils per room is not within the province of this report, yet it may be remarked in passing, that if more than 48 pupils per room is excessive, the pedestal type of desk may permit a reduction in the size of the rooms.

5. Equipment. — The equipment for teaching purposes seemed to be adequate. The two supply cabinets on the front wall balanced very well architecturally, and seemed to supply sufficient storage space. Tacking strips and picture moulds are both provided.

6. Blackboards.—The blackboards are of slate which is the most satisfactory medium known, although the engineers of the National Electric Lamp Association contend that green is the only color to use, and experiments are being made on ground glass of a greenish tinge.

The blackboard seemed to be a dull gray, unlike the slate of Bangor or Pen Argyl, Pa., which quarries produce the only slate suitable for blackboard purposes.

The heights from the floor seemed satisfactory.

Artificial Lighting. The artificial lighting system seems to be inadequate.

After much experimentation by electrical engineers, the best method for lighting class rooms has been determined to be six or preferably eight outlets in each room, located nearer the window wall in order to approximate as nearly as possible the direction of daylight. Semi-indirect fixtures located at a height from the floor, varying with the height of the ceiling, give the best results.

Switch control should be arranged, so that the row nearest the wall, opposite the windows, may be thrown on first.

Lights in corridors and unimportant rooms need not be given such careful consideration.

The Engineers of the National Electric Lamp Association are co-operating with the Architect and Chief of Medical Inspection of the Cleveland Schools in order to work out experiments which will result in the reduction of eye strain.

Some such arrangement may be made in any city.

The exit lights and stairway lights should come through a separate panel board to divide the chance for a dark building in case of a blown out fuse.

General Finish. The general finish throughout the building, such as plaster, wood trim, base, etc., is excellent quality and workmanship.

1. Woodwork.—The finish is oak, and the use of this wood is justified on the ground of lasting qualities and appearance.

2. Corridor Floors.—These are of wood. The board would be justified in the use of a more durable material.

This, however, is a matter that should rest with the judgment of the Architect, as the quality of various floors varies between the various cities.

In the case of wood floors, many cities are using a preservative which is found to prevent wear, and splintering. It also prevents the penetration of dampness, and prolongs the life of the floor. Care should be taken to specify a high flash point. The use of volatile oils should be avoided.

3. Hardware.—The hardware is of good quality. The use of the best and most durable hardware can be entirely justified.

Sanitation. 1. Cleanliness of the Buildings.—The sanitary condition of the buildings in general, was found to be excellent. In some cases, however, rubbish was found under stairways. No material of a combustible nature should be allowed near a stairway or any basement, and should be enclosed in a storeroom isolated from the rest of the building by fireproof walls and doors.

2. Method of Cleaning.—The rule of washing the walls every two years and painting every fifth or sixth year, is an excellent idea and the Commissioner of School Buildings should be highly commended for such a policy, and also for using an excellent quality of paint.

The walls of the buildings seem to have a smoky and dingy appearance. The question arises whether this apparent grime comes from the air which is blown into the room.

In one of the Cleveland Schools, which is heated by the indirect system, the same dingy appearance is noted.

If the condition is due to the ventilating system, possibly some change can be made in the air washer to obviate it.

3. Drinking Fountains. — a. Condition. The drinking fountains were found to be in good condition, and indicated careful supervision.

b. Types. Wall hanging type with silver bubbling cup, is used on the upper floors. The basement drinking fountains are the multiple trough type. Both types are good.

c. Number. The number of drinking fountains accord with the number in other cities where the state laws proscribe the number to be installed.

Unless the state laws dictate the number, the matter is largely one of judgment based on observation.

d. Location. The locations are good, the major number being in the basement, with individual fountains on each floor.

e. Height. Very little attention is usually paid to the height of drinking fountains. Most of those measured are too high from the floor for the comfort of small children, and consideration might well be given to this problem.

Toilets. In general, the toilet rooms in the St. Louis Schools are to be highly commended, as well arranged, well lighted and well ventilated.

1. Distribution.—St. Louis was one of the first cities to recognize the importance of distributing toilets throughout the building.

The main toilet rooms are in the basement, with secondary toilets on each floor. This saves much time during school hours.

It is a convenience to furnish the principal, teachers and janitors with separate toilets.

2. Type of Closets.—The closets are of the individual type with seat action. This is the most satisfactory method of flushing closets in an elementary school.

Individual Closets vs. Range.—St. Louis wisely barred all types of range closets many years ago, the chief objection being that they are not sanitary and that the amount of water used is excessive.

3. Partitions.—While the partitions between toilet stalls are of oak, which seem to be in splendid condition, yet the question of the excessive absorptive properties of wood over other materials would make it worth while to consider the use of a more non-absorptive material.

4. Sanitary Finish in Toilet Rooms.—The toilet rooms in the newest buildings are lined to a satisfactory height with a good quality of enamel brick. This expense is entirely justified on the ground of sanitation.

The floors of the toilet rooms are of cement.

Many cities have abandoned the use of cement floors in all toilet rooms on account of the absorptive qualities, and the effect of uric acid on the floor.

Asphalt, Composition and hard burned tile have been used successfully in other cities.

5. Location of Fixtures.—In the newer buildings the closets and urinals are located against the walls wherever possible, leaving the middle of the floor vacant. This is a very good arrangement, as it insures uninterrupted light to all corners of the room, and permits easy supervision of the room.

6. Height of Seats.—New York City has solved the difficult problem of the proper heights of seats in the toilet rooms, by making a certain number of the seats lower and indicating them as "Primary Seats."

Toilet Ventilation. The ventilation of toilet fixtures is a matter too often regulated by persons having no scientific knowledge of the subject.

Individual back ventilating is not only expensive, but very often doomed to failure through poor workmanship or because the vent pipes are too small. It is a well known fact that air cannot be successfully passed through a small pipe by means of ordinary fan action, without stagnation.

The theory of the well known French scientist, Louis Pasteur, that bacteria in sewage are not liberated in volatile matter, has been firmly established.

Consequently, if a toilet room is thoroughly ventilated and has abundant sunlight during a portion of the day, the matter of ventilating the fixtures is a minor consideration and may be accomplished satisfactorily by the loop or continuous vent.

Vacuum Cleaning System. Some of the newer buildings are well equipped with vacuum cleaner plants.

The best installation is an outlet in each room, as this permits the use of lengths of hose not exceeding 35′. This is an important item on account of the wear and tear on hose of longer lengths. In corridors the lengths should not exceed 50′.

A sweeper plant in a building is an economy, and it obviates the raising of dust and its subsequent settling on furniture and walls.

It is a distinct advantage both hygienically and economically.

Heating and Ventilating. 1. Old Buildings. — With the brief reference already made to the heating of the older type of buildings, the report will pass on to the newer plants with the simple statement that all reasonable precautions have been taken to heat and ventilate the old buildings.

2. New Buildings.—a. Type. The plants are very wisely laid out with a low pressure system. The added expense and danger of a high pressure system is not justified in a school building.

b. Boilers. The boilers are of the Hawley down-draft type, steel tubular, and operated at low pressure.

These are efficient smoke consumers and are economical of coal and in maintenance and operation.

In some cases the plant consists of one boiler.

The question of a double unit system is worthy of consideration from the point of view of the saving of fuel in mild weather and for break down service.

c. Engine. Low pressure steam engines are used usually in pairs. These low pressure steam engines are economical and

easy to operate. The system of low pressure engines is to be highly commended.

d. Air Washer and Humidity Control. While not attempting to definitely control the humidity in the room, yet a certain amount of moisture is introduced into the air entering the room, which obviates the most serious difficulty in school room ventilation, which is dry air.

In this respect, St. Louis has one of the best systems of school room ventilation in America; because a fatal defect is recognized and a serious attempt made to obviate it.

Usually a serious defect in an indirect system is condensation on walls and windows. If this does not exist to a serious degree in St. Louis, it indicates that the problem has been well handled from an engineering standpoint.

e. Indivdual Ducts. The individual duct system is to be commended, as it creates a positive situation inasmuch as the air is sent separately to each room instead of relying on the amount of air which would reach a room through a common plenum chamber.

f. Change of Air. The air is changed in the school rooms eight times an hour, whereas in most cities a change of six times an hour is provided. This will assure better ventilation.

g. Temperature Control. A satisfactory system of temperature regulation was found to be included in the system.

h. Fans. Blower fans are used without any fans for exhaust purposes. This system is the best engineering practice, as exhaust fans are unnecessary. In many school systems where they are installed, they are not operated.

i. Coal. St. Louis is purchasing coal at an extremely low price and apparently on an efficient basis.

Tests should be made to develop the amount of energy developed from the coal used.

j. In General. The table on page 130 shows that a great deal of space is devoted to heating plants. In many cases the

relation of the coal pocket to the boiler room is such as to necessitate handling coal more than once.

Valuable space given over to coal storage in the building might well be located underground just outside the building and directly adjacent to the boiler room. Coal wagons could be driven directly over the coal pockets, thus simplifying the delivery of coal.

In several cities which have been questioned relative to heating plants, it has developed that where low pressure systems have been installed, cast iron, smokeless boilers have been used with considerable success. These boilers are very economical of space and also require a minimum amount of coal.

The question of effective and economical heating and ventilating plants is so unsettled that any criticism of the ventilating of one school system by persons connected with another can be no more than suggestion.

The New York Ventilating Commission, now studying the problem of ventilation, may develop some suggestions which will be of material assistance.

The best safeguard is to keep an accurate record of cost and performance and give close study to the facts developed by the data thus secured, at the same time studying the results of like records in other cities.

Drawings and Specifications. A study was made of the drawings and specifications of some of the recent buildings.

They are of a very high order and are very complete.

Data in the United States Government architect's office, indicates a saving of from five to ten per cent in the cost of the buildings in cases where complete details are furnished in addition to scale drawings.

The additional time necessary to furnish complete drawings and specifications is amply justified.

Extravagances. The Board may be criticised from various sources on the following points: 1. Roof; 2. Corridors; 3. Exterior Decoration; 4. Landscape.

1. Roof. The pitch roof with wood roof trusses with slate properly nailed, will probably be no more expensive than a flat roof with reinforced concrete.

These problems are architectural and should be left to the judgment of the architect in charge of the work.

2. Corridors. Comment has been made on the width of corridors. This is a problem in economy in planning and should have consideration, and unless a Board of Education desires to maintain wide corridors for architectural effect, they might well be narrower, as the school buildings of other cities where narrower corridors are used, are ample evidence that the narrower corridors are practical.

3. Exterior Decoration. By the strictest economy, not more than $2000.00 could be saved on an average school building by omitting all exterior ornamentation. If a school building costs $200,000, $2000.00 would be 1%. If the building costs 20c per cubic foot, a saving of $2000.00 would mean a saving of 1/5 of a cent per cubic foot. This saving certainly cannot be justified when the aesthetic value of beautiful buildings is considered.

4. Landscape. Comment was made in another section of this report that the space occupied by formal planting might be restricted; but the excellent landscape work surrounding the St. Louis buildings is worth all it costs and should be continued.

Buildings and Educational Policies

The close relation between the course of study and the character of the buildings has been commented on in other sections of the survey report. It is important for the architect who has to put up a school building to keep in mind the fact that the course of study is undoubtedly going to become more and more complex in the future. New subjects will be added, and in many cases these new subjects will require building accommodations somewhat different from those that

are required for the ordinary class. It is consequently important that we keep in mind the general relationship between the building and the course of study and that we provide so far as possible for the future enlargement. The writer may draw upon his own experience in the city of Cleveland to illustrate very fully what is meant by the statement that the building and the enlargement of the course of study go hand in hand.

For example—The Murray Hill School, located in the Italian section of Cleveland, was organized in 1895 as an eight-room building. The building has no architectural merit, and was very cheaply constructed. No adequate provision was made for the principal or teachers, and no additional accommodations other than class rooms and toilets were provided for the pupils.

In 1908 the rapid growth of the city made an addition necessary, and another building was erected, connected to the first one by a corridor. This building contained thirteen (13) class rooms, and the educational ideas having become more specialized, an auditorium seating 500, a large gymnasium, a large principal's office with a waiting room, and a dispensary for the visiting physician and nurse, who had meanwhile been added to the educational staff, were incorporated. A little later, an open air class room, the first in Cleveland, was built over the auditorium, and it may be said in passing, that this room has been of more value to the community than can be estimated in dollars and cents.

Other sections of the report on the St. Louis schools will deal with the value of medical inspection and open air activities.

With these new features, which were added, the school became the important focal point of the district, and to realize it, one must know the problems in the lives of the patrons of the school which this school staff has to assist in solving.

The growth of this district continuing, the Board of Education faced the problem of a new building or a further addition to the existing double structure.

Owing to the nature of the district, it was decided to continue building on the present site.

Consequently, in 1915, a building costing $250,000.00 was started and connected to the other two by one-story corridors.

This building contains twenty-four standard class rooms, a kindergarten suite of four rooms with an office, a conference or small instruction room, toilets and store rooms; an open air suite of three rooms arranged for the proper grading of the pupils, with a teacher's room, a locker and warming room and a toilet; and on the roof a sun room 16′ wide and 120′ long, served by an elevator and having a doctor's room in connection with it.

There is also a large roof playground. This space is primarily for the open air pupils, but in the summer evenings may be used for dancing and for a refuge for tired mothers and small children, where they may have pure air and a little relief from the dirty, crowded streets.

There is also a housekeeping suite where care of the house may be taught. This suite consists of a living room, dining room, kitchen, bed room, hall bath room and closets.

Other rooms are a cooking and sewing room, a Manual Training room, a breakfast room for penny breakfasts, a teachers' lunch room with seats for the entire staff of sixty teachers, where they may and do all lunch together every day of the school year, thus helping the spirit of co-operation of the staff. A large rest room and library is also provided for the teachers, with coat rooms and toilet facilities.

There is an office on each floor, for the use of teachers for conferences or even for use as small informal class rooms.

There are also two rooms for defectives.

Toilet rooms are provided on all floors.

On the physical side, there are two large playrooms in the basement, a large swimming pool and a shower and locker room for both boys and girls.

All special features of the building may be used at night

without going into the school room section, as the special rooms are located off a common stair and elevator lobby. This facilitates supervision of the building during its use for social center purposes.

This entire plant contains therefore forty-five strictly standard class rooms and forty-one special rooms as contrasted with the original building of eight standard rooms and no special rooms.

This change took place within twenty years.

The special rooms are as follows:

4 Kindergarten Rooms.
1 Kindergarten Teachers' Room.
1 Kindergarten Office or Small Class Room.
4 Open Air Rooms.
1 Open Air Teachers' Room.
1 Open Air Locker and Warming Room.
2 Rooms for Defectives.
1 Domestic Science Room with Kitchen.
6 Housekeeping Suite Rooms.
1 Manual Training Room with Stock Room.
1 Auditorium, seating 500.
1 Large Gymnasium, equipped.
1 Club Room.
3 Large Play Rooms.
1 Principal's Office.
2 Teachers' Rest Rooms.
1 Teachers' Lunch Room with Kitchen.
2 Small Consultation or Class Rooms.
1 Breakfast Room with Kitchen.
1 Sun Room.
1 General Dispensary.
1 Dispensary for Open Air Children.
1 Swimming Pool.
1 Shower and Locker Room for Boys.
1 Shower and Locker Room for Girls.
1 Elevator.

While this may seem to be an unusual plant for an elementary school, yet Cleveland is building another plant very similar to Murray Hill, and other cities are erecting structures containing many special features.

In Public School 93, Queens, New York, provision has been made for increased social center activities, by cutting off a portion of the playrooms by folding shutters which can be operated to isolate corners of the larger room for clubroom purposes.

These playrooms have the floors finished smooth, so that they may be used for neighborhood gatherings and dances as well as for play.

In general, the New York elementary schools are built with auditoriums, and these rooms are now being fitted with tablet armchairs in order that they may be used as study halls, thereby increasing the capacity of the buildings.

In the basement of some of the New York school buildings, kitchens have been installed which are available not only for the preparation of lunches for the children, but for neighborhood Thanksgiving dinners, quite a number of which have been held in the schools, as well as other festivals.

To further extend the purposes for which the rooms may be used, experiments are being made with movable furniture in order to have as many convertible rooms as possible.

All roofs in the New York schools are used as play spaces, so that pupils may be readily afforded room for exercise in bad weather. This feature is more particularly applicable in New York where playgrounds are naturally restricted.

Social service work in the schools of New York has undergone considerable development, under the auspices of the People's Institute.

Several buildings have also been extended and shops for various kinds of industrial work have been added.

TABLE No. 1

City	School	*1. Heating	2. Sanitation	3. Stairs and Corridors	4. School Purposes	5. Total 1 and 2	6. Total 1, 2 and 3	7. Total 1, 2, 3, 4	8. Corridor Width	9. No. Stories	10. Cubic Contents (Cubic Feet)
New York .	School 95 Brooklyn .	5,304	1,264	8,340	31,932	6,568	14,908	46,840	8′	3	882,351
New York .	School 93 Queens ..	9,818	1,645	12,540	52,967	11,463	24,003	76,970	8′	5	1,591,720
New York .	School 178 Brooklyn .	11,598	1,822	12,796	51,330	13,420	26,216	77,546	8′	5	1,536,664
Philadelphia	39th Section	13,283	3,084	23,538	59,433	16,367	39,905	99,338	11′	3	2,141,000
Philadelphia	46th Section	4,862	1,739	16,994	31,679	6,601	23,595	55,274	12′9″	3	1,045,100
Boston . . .	Mary Hemenway ...	2,233	1,288	4,460	18,137	3,521	7,981	26,118	10′	2	447,000
Boston . . .	Wells	3,090	1,742	6,456	20,416	4,832	11,288	31,704	10′	4	615,000
Newark . .	Cleveland	4,260	2.088	16,504	48,867	6,348	22,852	71,719	10′	3	1,205,000
St. Louis ..	Laclede	5,576	2,712	13,402	29,108	8,288	21,690	50,898	16′	2	1,113,000
St. Louis ..	Bryan Mullanphy ...	6,761	2,456	15,932	33,430	9,217	25,149	58,579	16′	2	1,270,000
St. Louis ..	Penrose	5,338	2,536	14,842	33,842	7,874	22,716	56,582	14′	2	.....
St. Louis ..	Harney Heights	5,232	2,840	13,467	25,576	8,072	21,539	47,115	14′	2	1,072,000
St. Louis ..	Monroe	2,915	2,302	9,642	24,884	5,217	14,859	39,763	17′	3	.....
Chicago . ..	Le Moyne	4,489	2,724	26,754	47,638	7,213	33,969	81,605	15′	2	1,782,400
Chicago . ..	Helen C. Peirce	4,840	2,492	13,830	31,740	7,332	21,162	52,902	14′	2	1,185,800
Chicago . ..	Frank W. Reilley ...	5,280	2,456	21,680	35,108	7,736	29,416	64,524	14′	2	1,495,500
Detroit . ..	Joyce	3,441	1,753	8,386	24,292	5,194	13,580	37,872	14′	2	.....
Detroit . ..	Hely	3,867	1,472	9,180	22,701	5,339	14,519	37,220	14′	2	.....
Minneapolis	John Ericsson	2,506	1,320	9,196	16,614	3,826	13,022	29,636	14′	2	506,500
Minneapolis	Hiawatha	2,926	1,008	4,348	16,119	3,934	8,282	24,405	8′	1	497,700
Pittsburgh .	Watt	5,334	2,154	13,149	34,332	7,488	20,637	54,969	12′8″	2	1,205,000
Cleveland .	Addison	3,521	2,100	10,232	27,360	5,621	15,853	43,213	12′	2	666,500
Cleveland .	Empire	2,293	2,830	13,812	35,539	5,123	18,935	54,474	12′	2	1,063,250
Cleveland .	Rawlings	2,970	2,928	22,421	35,980	5,898	28,319	64,299	12′	2	1,222,400
Cleveland .	Murray Hill	4,085	2,596	16,569	42,889	6,681	23,205	66,139	10½′	.	.....
							.....	.....	8′	3	1,275,000
Cleveland . .	Almira	4,152	2,674	14,373	39,903	6,826	21,199	61,102	11½′	.	.....
							.....	.....	10′	3	1,106,000

* Figures given in columns 1 to 7 are in square feet.

Some sentiment has arisen in favor of swimming pools, so much, in fact, that the plans of some of the future buildings and additions to present buildings include such a possibility.

Vocational education and social service work in New York seems to have begun to develop formidably, all of which will necessarily have considerable influence on the plans of these buildings.

The elementary school buildings of Chicago are provided with auditoriums which are made large enough to seat the entire student population of the building.

Rooms are also provided for vocational work, and in some instances rooms for library purposes are built.

An examination of the plans of school buildings in Minneapolis, Boston, Pittsburgh, Philadelphia, Newark, Detroit, Chicago, New York and Cleveland indicates a growing tendency toward specialization in schoolhouse planning, and enlargement of the facilities for various kinds of school work.

Tables 1 and 2 compare the floor areas devoted to various purposes in twenty-six schools in ten cities, and show the relation of the areas to the cube of the building and also the accommodations in each building.

For purposes of this discussion the areas are divided as follows:

1. Heating. Including all rooms devoted to heating and ventilating purposes.

2. Sanitation. Including all toilets and washrooms.

3. Stairs and corridors. Including all stairs, corridors, lobbies, waiting rooms and passageways.

4. Educational. Including all class rooms, wardrobes, offices, rest rooms, assembly rooms, swimming pools, shower rooms, book stores, etc.

TABLE NO. 2

New York—School 95, Brooklyn—3 stories.
22 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (small).
Domestic Science.
Manual Training.
Science room.
Workshop.
Boys' play room.
Girls' play room.
2 Teachers' rooms.
Small office.
Medical Inspection.

New York—School 93, Queens—5 stories.
39 Standard class rooms.
1 Open air class room (standard).
Principal's office.
Assembly Hall.
Kindergarten (large).
Manual Training workshop.
Science room.
Boys' play room.
Girls' play room.
Large play room.
Lunch—kitchen.
Gymnasium.
Small office.
4 Teachers' rooms.

New York—School 178, Brooklyn—5 stories.
45 Standard class rooms.
1 Open air class room (standard).
Principal's office.
Assembly Hall.
Kindergarten (large).
Domestic Science.
Manual Training.
Science room.
Boys' play room.
Girls' play room.
Medical Inspection.
2 small offices.
3 Teachers' rooms.

TABLE No. 2—*Continued*

Philadelphia—39th Section—3 stories.
43 Standard class rooms.
Principal's office.
Principal's clerks' office.
Kindergarten (small).
Domestic Science.
Manual Training.
Manual Training recitation room.
Boys' play room.
Girls' play room.
Gymnasium.
Teachers' room.
Teachers' dining room.
Medical Inspection.

Philadelphia—46th Section—3 stories.
30 Standard class rooms.
Principal's office.
Principal's clerks' office.
Kindergarten (small).
Domestic Science.
Manual Training.
Industrial Arts.
Recreation and Social Center room.
Teachers' lunch room.

Boston—Mary Hemenway—2 stories.
16 Standard class rooms.
Teachers' room.
Kindergarten (large).
Domestic Science.
Manual Training.
Boys' gymnasium.
Girls' gymnasium.
Medical Inspection.

Boston—Wells—4 stories.
28 Standard class rooms.
Principal's office.
Assembly Hall.
6 Teachers' rooms.
Medical Inspection.

Newark—Cleveland—3 stories—portion of 4th.
35 Standard class rooms.
Principal's office.
Kindergarten (large).
Domestic Science.

TABLE No. 2—*Continued*

Manual Training.
Boys' play room.
Girls' play room.
Gymnasium.
Lockers.
Physical Director's office.
Library.
Medical Inspection.
3 Teachers' rooms.

St. Louis—Laclede—2 stories.
22 Standard class rooms.
Principal's office.
Kindergarten (large).
Boys' gymnasium.
Boys' play room.
Boys' shower.
Girls' gymnasium.
Girls' play room.
Girls' shower.
Teachers' room.

St. Louis—Bryan Mullanphy—2 stories.
20 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (large).
Domestic Science.
Manual Training.
Boys' play room.
Boys' shower room.
Girls' play room.
Girls' shower room.
Emergency room.

St. Louis—Penrose—2 stories.
25 Standard class rooms.
Principal's office.
Kindergarten (large).
Boys' gymnasium.
Boys' play room.
Boys' showers.
Girls' gymnasium.
Girls' play room.
Girls' showers.
Emergency room.

TABLE No. 2—*Continued*

St. Louis—Harney Heights—2 stories.
18 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (large).
Boys' gymnasium.
Boys' play room.
Boys' showers.
Girls' gymnasium.
Girls' play room.
Girls' showers.
Teachers' room.
Emergency room.

St. Louis—Monroe—3 stories.
18 Standard class rooms.
Principal's office.
Kindergarten (large).
Boys' play room.
Girls' play room.
2 Recitation rooms.
Library.

Chicago—Le Moyne—2 stories.
32 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (small).
Manual Training.
Domestic Science.
Domestic Science (dining room).
Library.
Gymnasium.
Teachers' room.

Chicago—Helen C. Peirce—2 stories.
23 Standard class rooms.
Principal's office.
Assembly Hall (used as gymnasium).
Kindergarten (large).
Manual Training.
Domestic Science.
Shower rooms.
3 Teachers' rooms.

Chicago—Frank W. Reilley—2 stories.
22 Standard class rooms.
Principal's office.

TABLE No. 2—*Continued*

Assembly Hall.
Kindergarten (small).
Manual Training.
Domestic Science.
Domestic Science (dining room).
Gymnasium.
Shower room.
Teachers' room.

Detroit—Joyce—2 stories.
14 Standard class rooms.
2 Fresh air rooms (standard size).
Principal's office.
Assembly Hall (small—32'x36').
Kindergarten (large).
Domestic Science.
Manual Training.
Library.
1 Play room.
Medical Inspection.
Teachers' rest room.
3 small recitation rooms.

Detroit—Hely—2 stories.
16 Standard class rooms.
Principal's office.
Assembly Hall (small—30'x36').
Kindergarten (large).
Domestic Science.
Manual Training.
Library.
1 Play room.
Medical Inspection.
Teachers' rest room.
2 small recitation rooms.

Minneapolis—John Ericsson—2 stories.
11 Standard class rooms.
Principal's office.
Kindergarten (large).
1 Play room.
Shower and locker room.
Medical Inspection.
Teachers' rest room.

Minneapolis—Hiawatha—1 story.
12 Standard class rooms.
Principal's office.

TABLE No. 2—*Continued*

Assembly Hall (used for play room).
Exhibition Hall.
Kindergarten (large).
Library.
Boys' shower and locker room.
Girls' shower and locker room.
Medical Inspection.
Small recitation room.
Teachers' room.

Pittsburgh—Watt—2 stories.
16 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (large).
Domestic Science room.
Model dining room.
Demonstration room.
Sewing room.
Fitting room.
Manual Training room.
Drafting room.
Demonstration room.
Finishing room.
2 Voting rooms.
Boys' play room.
Girls' play room.
Small recitation room.
Medical Inspection.
Teachers' room.

Cleveland—Addison—2 stories.
16 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (small).
Domestic Science.
Manual Training.
Work shop.
Gymnasium.
Handball court.
Shower and locker room.
Medical Inspection.
Teachers' rest room.
Teachers' lunch room.

TABLE NO. 2—*Continued*

Cleveland—Empire—2 stories.
20 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (large).
Domestic Science.
Manual Training.
Small shop.
Boys' play room.
Girls' play room.
Swimming pool.
Boys' shower and locker room.
Girls' shower and locker room.
2 Small offices.
Small recitation room.
Medical Inspection.
Teachers' rest room.
Teachers' lunch room.

Cleveland—Rawlings—2 stories.
20 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (large).
Domestic Science.
Manual Training.
Small shop.
Boys' play room.
Girls' play room.
Swimming pool.
Boys' shower and locker room.
Girls' shower and locker room.
2 Small offices.
Small recitation room.
Medical Inspection.
Teachers' rest room.
Teachers' lunch room.

Cleveland—Murray Hill—3 stories.
24 Standard class rooms.
Principal's office.
3 Open air class rooms (standard size).
Warming room (open air).
Small recitation room (open air).
Sun room (16'x120' on roof—open air work).
Medical inspection room (for open air pupils).
Kindergarten (large).
Kindergarten (small recitation room).

TABLE NO. 2—*Continued*

Breakfast room (may be used as class room).
Domestic Science.
Housekeeping suite
1. Living room.
2. Dining room.
3. Bedroom.
4. Bath room.
5. Kitchen.
Manual Training.
Boys' play room.
Girls' play room.
Swimming pool.
Boys' shower and locker room.
Girls' shower and locker room.
Recitation room.
3 Small offices or conference rooms.
Teachers' rest room.
Teachers' lunch room.

Cleveland—Almira—3 stories.
24 Standard class rooms.
Principal's office.
Assembly Hall.
Kindergarten (large).
Domestic Science.
Manual Training.
Boys' play room.
Girls' play room.
Swimming pool.
Boys' shower and locker room.
Girls' shower and locker room.
Medical Inspection.
Recitation room.
Teachers' rest room.
Teachers' lunch room.

In the above tables attention is called to Empire and Rawlings Schools. These buildings were built at the same time from the same requirements. See Table No. 2.

Rawlings School shows an increase in cube over Empire of 15%. The increase in cost of Rawlings over Empire is 8% or $14,000. In other words, to secure the same accommodations, the more extravagant plan cost the Board of Education of Cleveland $14,000.00

An examination of the table shows that a major portion of the difference in areas in these two buildings is in corridors. This shows that approximately $14,000.00 was paid for additional corridor space, which was of no value for school purposes.

Tables No. 1 and No. 2 develop some interesting data on the capacity of buildings. The Bryan Mullanphy School and the Murray Hill School are both of approximately the same cube. Table No. 2 shows the excess of accommodation in Murray Hill over Bryan Mullanphy.

Murray Hill is a compact three-story building with narrow corridors, while Bryan Mullanphy is a two-story building with wide corridors.

Space cannot be given to a complete discussion of all the data the two tables have developed, but attention is drawn to the fact that the buildings with the narrow corridors show to advantage in the ratio of corridor space to school space, and the building of three stories or over, show to advantage in the same respect over those of two stories.

In the case of Empire and Rawlings, the latter, which contains more waste area, costs less per cubic foot.

Under the common rule of judging the expense of a building by the price per cubic foot, the Rawlings School would be considered the cheapest, but the above tables show that it furnishes no more school accommodation and costs $14,000.00 more.

The above method of comparing school buildings is to be adopted in Cleveland in studying future buildings, instead of the cubic foot for a basis, for the reason that it has already demonstrated the wastefulness of several plans which were considered economical because of a low cubic foot cost.

It is not possible to give all of the detailed comments suggested by these tables. The interested reader who will compare Column 4 with Column 6 will discover that there is great variation in practice in different schools.

One example may be selected which is within the writer's intimate personal experience. The Empire and the Rawlings schools in Cleveland were built at the same time and with the same requirements from the Educational Department, but they vary surprisingly in areas and cubes. The result of this discovery has been to bring about a more careful study of plans. Several sketches are made for each new operation, and, all things being equal, the building showing the largest proportion of available space as compared to the cubic contents, all other factors being considered, is accepted by the Building Committee and working drawings authorized. In this way much waste space has been eliminated.

Corridors which were formerly 14 and 16 feet in width have been reduced to 10 feet and in the largest buildings are found to be ample.

Most impressive are the facts exhibited in Table 2. It will be seen that some school buildings are equipped with the maximum variety of accommodations, while other buildings are very meagre in their provisions for unusual activities.

The problem which is presented when the demand for extra accommodations is considered is a grave one, especially when funds are not at hand for adequate general school sittings. The future with its probable revisions of the course of study complicates the problem still more.

Lack of funds and the movement in favor of vocational training and social service work have resulted in several attempts to solve the congestion in school systems by various expedients. There is the Gary plan, the Kalamazoo plan, and the Cleveland platoon plan. However, a city of the population of St. Louis or Cleveland cannot rush into a wholesale adoption of any plan of this sort until it has been given a thorough trial, and, above all, not until it has been firmly established that rotation of classes or the double use of school rooms does not lower the standard of scholarship.

In all probability some method of rotation, together with the use of shops, gymnasiums, and swimming pools, will en-

able cities to solve the congestion problem to a certain degree.

No plan of this sort, however, can obviate the necessity for new school buildings, and in all probability growing cities will need all the money that can be raised from taxation and other justifiable means for this purpose, even though they make the fullest use of the school plant that is advisable when the highest standard of scholarship is maintained.

In anticipation of the future and in advance of any actual enlargements in educational policy, school buildings which cannot be altered without great expense should be properly planned for future extension.

It is wise, therefore, in looking forward to the history of a building, to plan for any changes that may take place. A plan which has been developed in Cleveland may be cited as showing how provision may be made in a general way for future development. The unit plan of building which has been adopted in Cleveland, can certainly be imitated in principle, if not in exact form, in other cities.

Three years ago with this point in view, the Board of Education of Cleveland approved a suggestion to build school buildings on an extendable type plan, with provision for Auditorium, Swimming Pools, Shower and Locker rooms, and shops, and with the possibility of a future extension of the building to meet the needs demanded by any possible change in the educational policy.

Later a unit type of plan was adopted, which in brief is as follows:

The unit of the building is the class room with its wardrobe and heating duct space. This unit is 25′ wide and 40′ long. The wardrobe space contains hat, coat, rubber and locker space for 80 children, thus solving the problem of finding coat room accommodations for a larger number of pupils than the standard class rooms seat, which is the problem faced in all buildings when any sort of rotation system is in use. The wardrobe space also contains storage for books, charts and other school supplies as well as the teachers' wraps.

The duct space is large enough to accommodate additional piping which might be necessary in case any of the rooms should be required for shops at any future time. In this way, structural changes of a serious nature are obviated.

Fig. 5 indicates the unit.

The room is ventilated from both ends and in case shops are installed in place of some of the class rooms, other class rooms may be divided in two by a partition, as the room is lighted by a twin window system and ventilated at both ends so the smaller rooms would be well ventilated and lighted.

Fig. 6 is a plan of one of the new elementary schools of Cleveland, built on the platoon and unit plan, and Fig. 7 is the same building altered into a junior high school with laboratories, shops and small recitation rooms, instead of standard class rooms.

Figure 8 shows the future extension of this building and its possibilities as a high school, should the needs of the Educational Department require that it be used as such.

The fact that several new buildings have been transferred into junior high schools is ample evidence that an elastic plan is advisable.

The foregoing brief outline is an indication of the change in educational policies and the necessity of a study of the building problem in connection with it.

FIGURE 5

Illustration of the unit of the Cleveland platoon plan. This consists of the class room, the coat room and storage room, and the duct and pipe space.

The room is lighted by a double unit window system, and the heat and vent ducts are located at either end of the room, in order to provide heating and ventilation for the two small rooms which may be secured by cutting the room in two.

By using tablet armchairs, the small rooms seat approximately as many pupils as the large room with the standard school desk.

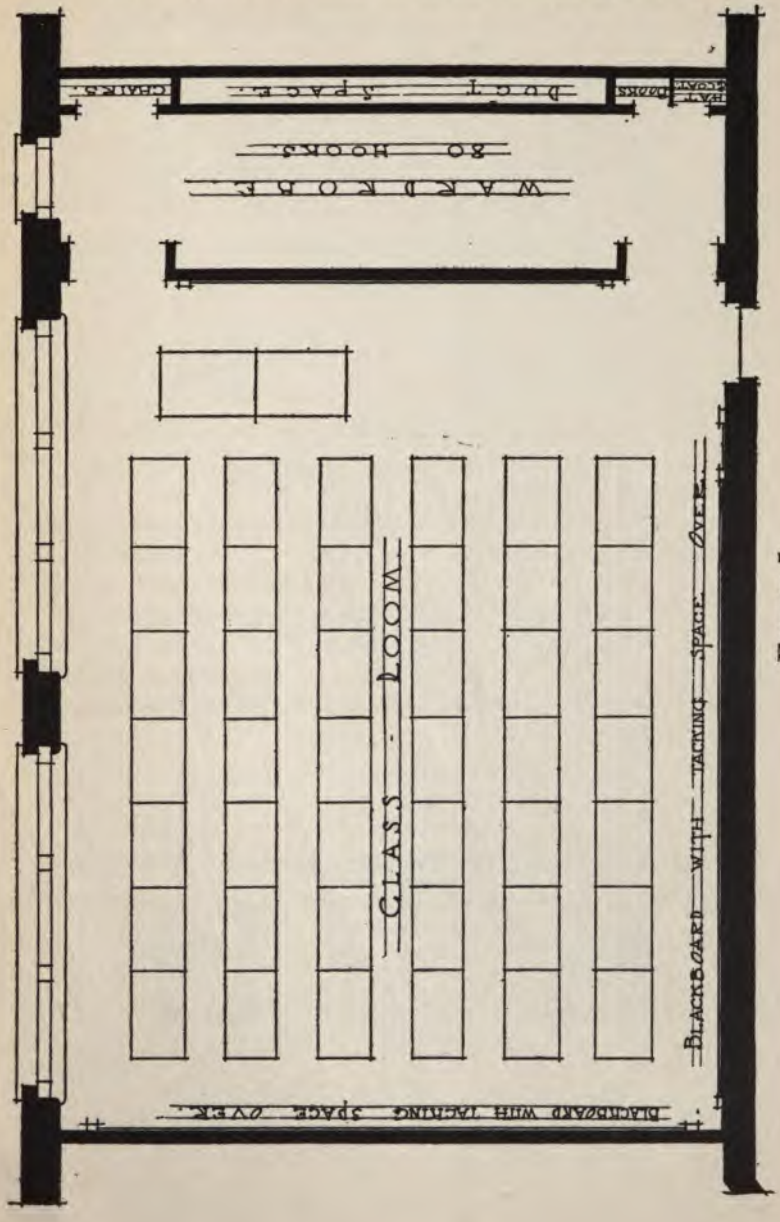

FIGURE 5

FIGURE 6

CLEVELAND PLATOON PLAN

The plan shown above is laid out on the unit basis. (See Fig. 5.)

The line A-B indicates the line at which the first building operation may be stopped. This omits the Auditorium and Swimming Pool, and allows only for the construction of Standard Class rooms. The future development may take place beyond the line A-B, and may be along any line, as indicated on Figs. 6 and 7.

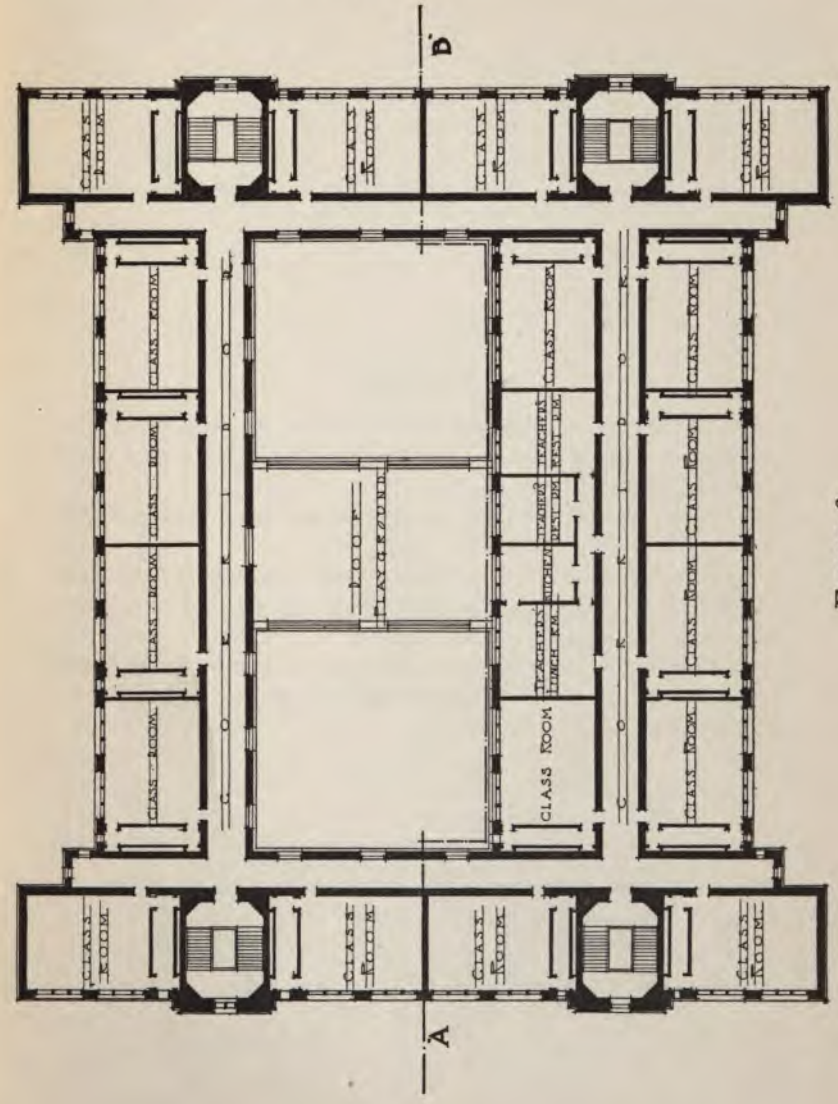
B
A
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
CLASS ROOM
ROOF
PLAYGROUND
CLASS ROOM
TEACHER'S
TEACHER'S
REST RM.
REST RM.
LUNCH RM.
LUNCH RM.

FIGURE 6

FIGURE 7

This is the same building shown in Fig. 6. The small partitions have been removed and large laboratories and small class rooms have been created.

Note the double window system in each class room in Fig. 5, which permits the subdivision.

Each room in Fig. 5 is heated and ventilated from each wardrobe, thus permitting each small room to be ventilated after subdivision has taken place.

The duct spaces, which are continuous from the basement to the roof, allow new pipe to be run to laboratories at a minimum cost.

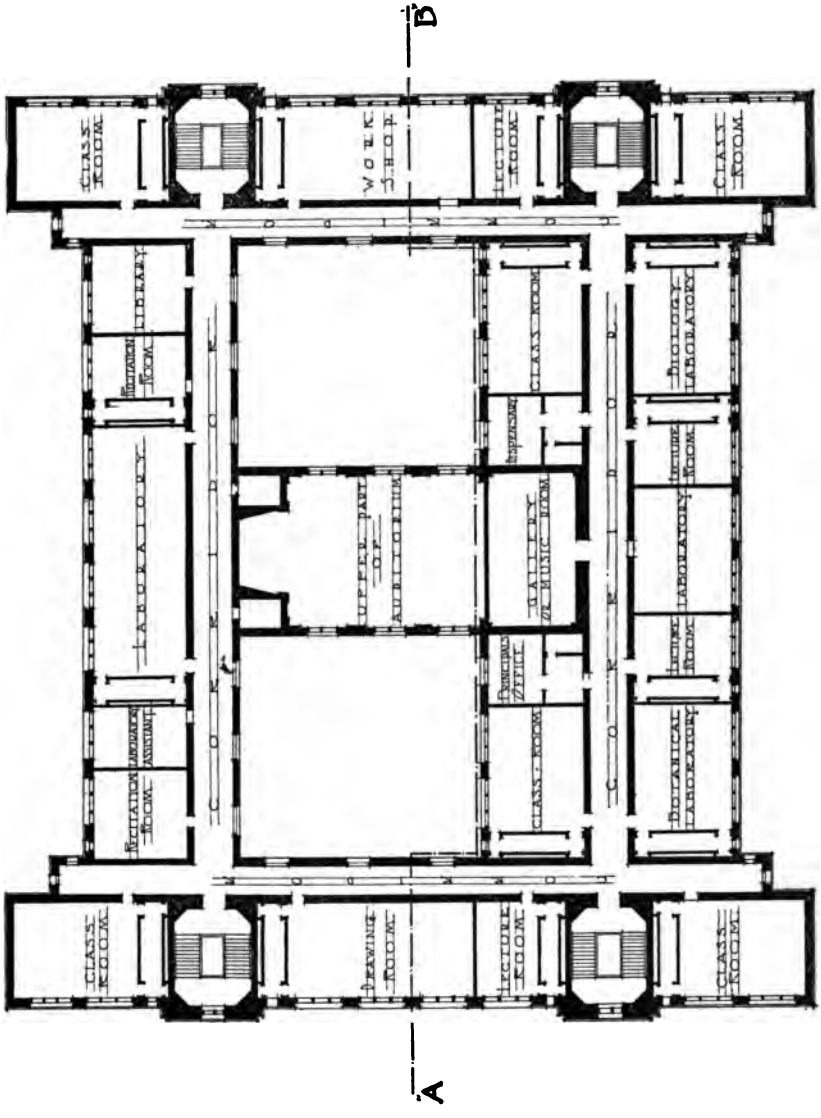
B
A
CLASS ROOM
WORK SHOP
LECTURE ROOM
CLASS ROOM
LIBRARY
LABORATORY
CLASS ROOM
PHYSICAL LABORATORY
LECTURE ROOM
GALLERY OF MUSIC ROOM
LABORATORY
LABORATORY
CLASS ROOM
BOTANICAL LABORATORY
CLASS ROOM
DRAWING ROOM
LECTURE ROOM
CLASS ROOM

FIGURE 7

FIGURE 8

This plan indicates the same building extended from the line A-B, and transformed into a High School. The Gymnasiums are built in the center courts, and at the basement level.

Various rooms necessary to High School purposes are constructed on the portion beyond A-B. The Kindergarten becomes the Library.

Thus the plan for an elementary school may be developed into a Junior High School or a High School.

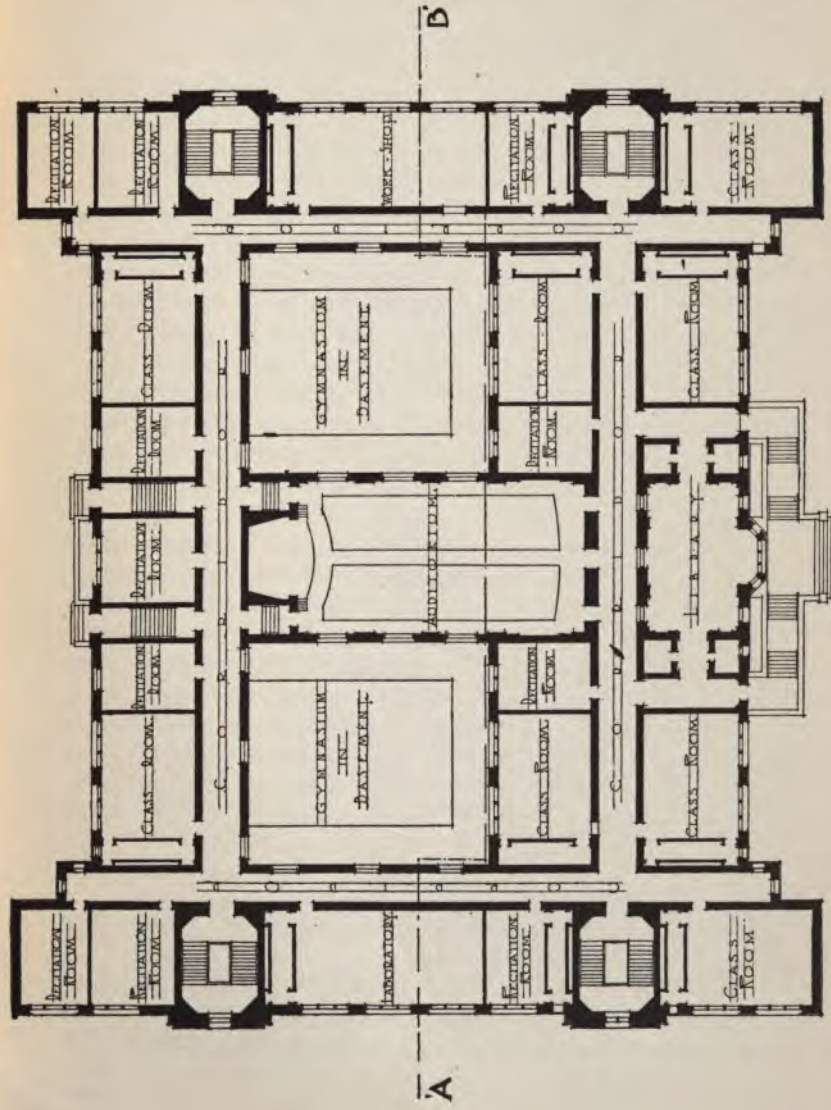
B
A
RECITATION ROOM
RECITATION ROOM
WORK-SHOP
RECITATION ROOM
CLASS ROOM
GYMNASIUM IN BASEMENT
CLASS ROOM
RECITATION ROOM
CLASS ROOM
RECITATION ROOM
AUDITORIUM
RECITATION ROOM
LIBRARY
RECITATION ROOM
CLASS ROOM
GYMNASIUM IN BASEMENT
RECITATION ROOM
CLASS ROOM
CLASS ROOM
RECITATION ROOM
RECITATION ROOM
LABORATORY
RECITATION ROOM
CLASS ROOM

FIGURE 8

Financing School Building Funds

The question arises whether it is proper to erect buildings on funds that will have to be paid back by the next generation. The answer to this question is found in a consideration of the permanency of these buildings. In earlier days, when the buildings did not have proper appliances for school work and when the material was of indifferent character, it was a grave question whether bonding was legitimate; but in recent years, when better material has been employed for these buildings and when plans are of such a character that the life of a building can be considered to be fifty to one hundred years, it is entirely legitimate to secure funds for the largest possible provision which can be made for the next generation.

There can be no argument against extending the payment of our school construction costs to those who follow us, by means of bond issues, provided the amount of bonds issued does not assume such proportions that the interest and sinking fund to retire them does not reduce the maintenance fund and jeopardize the operation of the school system.

It is the duty of the Board of Education to administer the funds wisely, but the duty of the tax payer to furnish the funds, and no body of citizens in our great cities today will refuse to perpetuate and improve the greatest asset in our country—its Public Schools. If the taxes are not sufficient, let bonds be voted.

Recapitulation

It is often easier to find fault than to praise. It is easier to tear down than to build up.

For twenty years St. Louis has been carrying on its building work under the direction of its own architect. This plan is the best method for developing a continuing policy and bringing about the best in schoolhouse construction;

and by this means St. Louis has raised the standard of schoolhouse construction to a very high plane and stands as a pioneer in the development of modern school buildings of the first order.

The various sections of this report cover practically all features of schoolhouse planning and construction and it is the intention to emphasize the importance of a serious study of the building problem in order that it may reach its highest development structurally and also result in the creation of plans that will be elastic and in conformity to the rapidly changing educational and social problems and ideas, both of which are to bear a strict relation to the school buildings of the future.

There has been too much of a tendency in all cities and among all architects to be careless on schoolhouse planning. To save expense, material has been cheapened and necessary equipment omitted with never a thought as to whether the plan is extravagant as to space or cube. The architect is satisfied if his building shows a low cubic foot cost compared to the cubic foot cost in some other city, whereas in providing the same student accommodations he may have a lot of waste area with high studded rooms, all of which additional cubical cubage tends to lower the price per cubic foot, but raises the total cost of the building. He satisfies his own conscience and satisfies his building committee, but in reality he has failed to solve his problem as successfully as his colleague, who has studied his problem carefully and who has eliminated waste space and lowered the cubage by building a compact building, even at the expense of being indicted for showing a higher cubic foot cost.

One can generally be suspicious of a building showing an abnormally low price per cubic foot, for the chances are that the use of poor and cheap materials and lax supervision are the direct cause.

The use of extravagant materials is to be condemned, but no such tendency seems to exist generally in this country

and with intelligent architectural services and properly conducted competitive bidding, the citizens of any city should feel secure and satisfied that the prices they pay for school buildings are just.

The chief waste and resultant cost to the tax payer in connection with schoolhouse construction in St. Louis and in all other cities is the lack of care taken in planning and designing school buildings to prevent wasting space, and consequently building materials, and in the lack of co-operation between the Board of Education in the various cities of the country.

There should be an exchange of ideas, in economy of planning and data concerning the relative value of various building materials.

Also an exchange of data concerning the cost of maintaining various kinds of heating plants and other data relating to the many engineering problems entering into schoolhouse construction.

Above all, one must never lose sight of the fact that the artists and artisans of the future are the children of today and our school buildings must be intelligently and economically planned and not copied from those of some other city or from a preceding building in the same city. Study and care must be given to each problem, and fortunate is the city who entrusts its schools to those whose ideals are high and who realize that the impressionable child's mind must be taught of good workmanship and materials by examples in stone, brick, steel and wood, which our minds have conceived and our hands have moulded into beautiful buildings.

"All works of quality must bear a price in proportion to the skill, time, expense and risk attending their invention and manufacture. Those things called dear are, when justly estimated, the cheapest. A composition for cheapness and not for excellence of workmanship is the most frequent and certain cause of the rapid decay and entire destruction of arts and manufactures."—Ruskin.

CHAPTER V

HYGIENIC CONDITIONS IN THE BUILDINGS

By F. B. Dresslar

The obligation to give every child a good education is fortunately so universally recognized in American communities that there is no need of arguing the case further. Some of the corollaries of this obligation are, however, much less clearly understood. If children are to be educated, buildings must be provided where wholesome hygienic conditions will be supplied, and where the accommodations are adequate for the subdivision of the pupil population into suitable units for purposes of instruction. If education is required, the city cannot neglect the construction of comfortable and sanitary classrooms for children. We can frequently economize on non-essentials; but good teachers and comfortable and wholesome housing for the schools are essentials and, indeed, are fundamental conditions in the economics of child life.

The citizens of St. Louis are to be congratulated on the splendid public school buildings they have erected and dedicated to the education of their children. Possibly no other city in our country can, in general, make as good a showing. To be sure, the oldest buildings now in use, such as the Blair, Divoll, and others of this type, were built before much thought had been given either to convenience, proper lighting of classrooms, and other hygienic requirements, hence these buildings do not meet the standards of today. But be it said to the credit of those in authority, these buildings were substantially built and for the most part are in good repair. The newer types of buildings, especially those built during the last 15 or 20 years, are in general excellent models of adaptation of structures to their purpose.

School architecture has here received more consistent and careful thought than in any other city in the country, so far as the observations of the present writer have extended.

In one important respect the school buildings of St. Louis are open to criticism. The classrooms have been arranged with a view to accommodating a very large number of children. It is the judgment of the present writer that it is false economy to expect any school teacher of St. Louis, or any other city, to teach fifty children daily and to meet the full and immediate needs of each. It is possible for teachers, in handling this number, to exact certain minimum demands of all, and because there is lack of time to meet individual needs, to become complacent with results below the highest standards, but this is directly and definitely contrary to the purposes of education. The city cannot postpone to some more convenient day the physical, mental, and moral development of the generations of children as they pass through the schools. They must get their share of life now or forever be short of their possibilities. Wholesale education like wholesale farming always brings in lower returns than intensive effort. There can be no doubt that a teacher who has thirty-five or forty pupils to instruct can get better returns from her work than one, other things equal, with fifty. It is false economy, therefore, to give her the larger number.

With these general comments on the crowded classrooms and the importance of hygienic conditions, we turn to the detailed consideration of the hygienic conditions found in inspecting the schools.

Janitor Service

The janitor service, as are all matters pertaining to the care of the building and grounds, is under the direct control of the Commissioner of School Buildings. The janitors are, therefore, responsible to him, and complaints or commendations reach him through the principals, the superin-

tendents, or others who co-operate to keep the buildings in sanitary condition.

In addition to a chief janitor, there are such assistants as the work demands. In all cases, in the larger buildings, one or more women are employed as assistants, and these are especially charged with the work connected with the girls' toilets, baths, etc. The janitors are all appointed from an eligible list prepared by the executive officers of the school system. The result is that selections are of a highly creditable type.

In the main the buildings can be reported to be in excellent condition. Windows and floors were well cared for. Certain suggestions for improvement are, however, added to the discussion of details.

Buildings

One of the most important problems in the care of school buildings is keeping the basements clean and free from rubbish, waste paper, paint cans, oil-soaked rags, lint, and any accumulation of unused lumber, broken chairs, benches, decorations, etc., which tend to find a lodgment there. In the main the basements are clean. It was observed, however, that there is throughout the system a plan of gathering up waste paper and marketing it, and thereby teaching the children a good lesson in economy and cleanliness. But it was also observed that in the basements of many of the buildings piles of bags filled with paper accumulate to an undesirable extent. Some of it is likely to contain scraps of food, and it was noticed that in some cases mice were rather plentiful as a result. The accumulation of this paper in basements should not be permitted, and some method should be devised at once to care for it so as to minimize possible danger.

The plenum ventilation chambers were generally very clean, and in only two cases did we find any objectionable

material stored in them. Janitors should know that these rooms must be kept scrupulously clean and free from anything that would retard the movement of the air, or introduce any odors into the classrooms.

The floors of the classrooms and halls were generally clean and gave evidence of daily care. The sweeping is done with damp sawdust and a brush broom. The floors in the newer buildings, and in some of the old, are of maple. None of the floors have been treated recently with oil or wax of any sort, and the statement was reported that this is not permitted. The Board of Education itself carries through a sort of sinking fund, the insurance on all its buildings, save the Central High School, the O'Fallon School, the portables, and the Department Shops, and, hence, this regulation, regarding oil and wax, is not one imposed by the underwriters. It was noticed that, while the floors were clean, in some places shrinkage had occurred. The objection to oil is that where it is overdone the floors have become soggy and greasy; but where common sense and skill were used, oil and wax have proved useful. We do not hesitate to say that dry floors are much to be preferred to greasy, sticky floors, but it is not necessary to go to either extreme. We believe that conditions here could be improved and the floors be made to last longer if some form of safe and sanitary dressing were used intelligently. The vacuum cleaning system is used in many schools. The mistake made by so many cities in the installation of vacuum cleaners, namely, that of attempting to get satisfactory service for three or more rooms through one pipe set in the hall, has not been made here, and as a result we found here the cleaners in actual use. Any vacuum system so installed as to make it necessary to use a hose more than 50 feet long will almost inevitably prove a failure simply because the hose thus becomes too heavy and unwieldy to manipulate with any degree of ease, and the suction is reduced by friction to a point below full efficiency. Many systems in large school buildings have

not proved a profitable investment because they are rarely used enough. This, as indicated, is often due to false economy in installation. If they are to be used at all, there should be an opening near the center of the teacher's end of each classroom, as well as a proper number in halls, so that only a short hose would be needed to reach any part of the floors or walls.

We saw very few feather dusters anywhere, and still fewer in use. Dusting is done with "dustless mops." The form used, however, we were told, is not satisfactory and that a new and better type will be used in the future.

In contrast to those cities where contracts are let to window-cleaning companies, we found the windows in the St. Louis schools are washed by the janitors whenever they need it and, as a consequence, the windows were in good condition.

St. Louis, as a great manufacturing center, is full of coal smoke and soot. The walls of many of the schoolrooms are darkened and rendered correspondingly untidy by the accumulation of this material, and should be cleaned. We were advised that this is to be done during the summer vacation by the specially trained workers in the Building Department. The walls of a goodly number of the older buildings were painted with colors which absorb too much light and which are often really disagreeable. In all the newer buildings this error has been corrected and a light "transparent gray" is being used.

We observed with satisfaction that the head janitors have an intelligent understanding of the somewhat complicated machinery in their buildings, and that they take pride in explaining the use and care of these appliances. A janitor of a modern school building must know a great deal more than how to sweep and build fires, though these are important duties. The general spirit of any large system of schools can be fairly, even though partially, judged, by the intelligence and capabilities of its janitors. A system domi-

nated by political influence readily and easily exhibits this evil through its janitor service. The civil service rules here applied to the appointment and retention of the chief janitors are evidently working well.

Sanitary Equipment

The toilets were in good condition in all the newer buildings. In the older types of buildings, where the automatic flush latrines are still in use, and where frequently both the stalls for the seats and the urinals were set in the middle of the rooms instead of around the walls, the toilet rooms were often dark and badly ventilated. Under such conditions janitors cannot keep such rooms as clean and wholesome as they could with the more modern types of sanitary fixtures. It would be a vast improvement in such buildings if a better type of toilet seats and urinals could be installed and set so that light can be admitted. The toilets would then be more easily kept and supervised. The prevailing method of equipping the new buildings for the elementary grades is to put the main supply of toilet facilities in the basement, and to provide only emergency toilets on the floors above. This is to be commended, especially if the various grades are dismissed at slightly different times at intermissions to avoid congestion and the questionable associations in these rooms of the larger and smaller children.

This offers a good opportunity to make a plea for a much needed adaptation of plumbing supplies to the small children. All the toilet seats in the St. Louis schools, so far as the writer observed, are the same height for all the children, and these are adult sizes and of adult height, approximately 16 inches above the floor. A small child has difficulty in using these fixtures. If, for example, half of the seats were about 11 inches above the floor, the small children would not only be more decently accommodated, but this provision alone would serve to segregate them to the advantage of all concerned.

The same lack of adaptation was found in the lavatories and drinking fountains. If adults had to wash their faces in lavatory bowls set as high as their chins, and submit to water running down their sleeves, it is possible they would soon understand why lavatories of the proper height for children should be installed in our schools. We found, however, that all the lavatories in the buildings are of the same height and made for the proper accommodation of adults only. A lavoratory suitable for a child would certainly cost less than one of proper size for an adult, for it would be smaller in all of its parts, and would require less room to set. Likewise, if drinking fountains were set so high for adults that many of them would have to climb up on the fixtures to get a drink, we believe that in time they might be made to see that we are not as thoughtful for the child as we are for the adult. Fortunately, all that is needed to adjust drinking fountains for small children is merely to set them lower. If, as suggested for the toilet seats, this adaptation were made for the little ones, it would serve to segregate them into groups according to their size, and this would avoid confusion, and often prevent the imposition of larger pupils. We recommend that these adaptations should be made in all buildings to be constructed or refitted with sanitary fixtures. It is never satisfactory to use benches or steps in front of seats, lavatory bowls, or drinking fountains, for these are troublesome in cleaning and somewhat dangerous for the children.

Ventilation and Heating

Due to the fact that the survey of the buildings was made during the first half of June, when fires were not needed for classrooms, and because the fans are run by low-pressure steam engines connected with the boilers for heating purposes, we, of course, had no opportunity to estimate directly the efficiency of either the heating plants or the mechanical

means of ventilation. We have, however, made a careful survey of the facilities for these purposes installed in each type of building, and have also made inquiry of principals and teachers whether the heating and ventilating systems have proved acceptable and adequate, and upon these data are able to express, with a reasonable degree of certainty, that it is our opinion that the Commissioners of School Buildings, together with their engineers and builders, have taken intelligent precaution to meet these requirements in a very satisfactory way. We found, for example, that low-pressure steam boilers furnish heat to all the better buildings for the elementary grades, and where conditions seem to demand, direct radiation as well as indirect is also used to insure ample heat in the most severe weather.

When the weather is such as to demand artificial heat the plenum system of driving the fresh warmed air into the rooms is used. This system, of necessity, demands that the doors and windows of classrooms be closed, else unequal plenum will be established and hence short circuiting result.

During recent years the problems of ventilation and heating have been discussed as never before, and a great deal of experimentation has been undertaken, to answer, if possible, some of the questions involved. It would be too much to say that our knowledge at this time is adequate to meet all theoretical or practical demands. Our open air school work as well as common sense have made it clear, however, that we should approximate as far as possible in closed rooms, with the exception of temperature, the air conditions found out-of-doors in good wholesome locations. That is to say, we know that we should supply properly heated, pure, clean air, with from 40 to 60 per cent saturation, and keep this air in such motion as to bring it continually to all the children and teachers within the building.

Any method of ventilation, whether by window or by mechanical means, which will not accomplish this is correspondingly faulty.

In open air schools there is no problem of ventilation because the pupils are surrounded with fresh air at all times, their extra clothing, when needed, retains the body heat, and only those natural fluctuations in humidity occur to which they are commonly adjusted. If, on the other hand, approximately fifty children are grouped in a room of less than 10,000 cubic feet capacity, with windows on one side only, and the weather is cold, it is manifestly impossible to depend wholly on windows for ventilation and at the same time insure an even, regular, and justifiable temperature in all parts of the room and a constantly changing body of fresh air properly cleaned and humidified for each child and teacher. When we say this is possible with a mechanical system, we do not assert that it is often fully accomplished. The plenum system of ventilation, which is generally used in the schools of St. Louis, depends for its success on a few simple but all-important principles: First, there must be ample fan power, with fans running at a moderate rate, to drive into each classroom and other rooms in use the amount of fresh air needed to keep the air pure and wholesome. This amount of air will vary with the number of pupils and teachers, somewhat with the age of the pupils, and with the nature of the work in which they are engaged. Vigorous physical exercise of the children will call for more fresh air than quiet work, just as running will cause one to breathe more rapidly than is necessary when walking. In the second place, the ducts which are designed to carry the fresh air from the plenum chamber to the various rooms in the building must be ample in size and sufficiently free from inducing friction to the passage of the air to deliver the volume needed. Third, the rate of the inflowing air and the position, size, and form of the inlets must be such as to cause a gentle but constant movement of the air in all parts of the room. Fourth, doors and windows of all rooms must be closed to prevent disproportionate distribution of air in the various rooms of the building. Fifth, exit ducts must be ample in size, properly

placed, and sufficiently clear and direct to permit, without undue friction, the escape of the air after its circulation amongst the children. Sixth, a humidifying and air-washing device must be installed and managed intelligently in order to prevent the children from being compelled to breathe dirty air during cold weather, or air too dry and harsh to be wholesome. Seventh, air to be driven into the building must be taken from a source free from all possible contamination. Eighth, the temperature of the schoolroom should be automatically regulated between a minimum of 65 and a maximum of 68 degrees Fahrenheit.

We cannot undertake in this report to go into the details of the discussion of all or either of these requirements. But it may be helpful to explain to some extent the prevailing faults in mechanical systems of ventilation now in use in most cities in our country, and why they have been condemned by teachers and school officers somewhat generally.

In a strikingly large majority of cases inadequate fan power has been installed. There are cities, many of them, undertaking to ventilate a sixteen to twenty-room building with fan power too small to serve satisfactorily half of this number. Under such conditions it is a foregone conclusion that ventilation will be unsatisfactory, that the teachers will complain, that the pupils will suffer, and that money has been wasted. But it would be as unscientific to condemn all systems of mechanical ventilation as the results of such mistakes as it would be to condemn the value of shoes because some people persist in buying shoes without respect to comfort or health demands. There can be no doubt at all that with an adequate and properly installed and managed mechanical system of ventilation, classrooms can be furnished constant, regular and satisfactory ventilation. But no system can be installed that will satisfy all teachers. The home habit of opening doors and windows will persist, and when this is prohibited some will complain even though the air is cleaner and purer than that out-of-doors. It is a rare

teacher who will take the trouble to understand in a thoroughgoing way a plenum system of ventilation and be able to apply to it scientific tests, rather than personal feelings, or mere opinions. The very fact that windows and doors must be closed to insure the proper working of this system is, to many, so unusual and apparently unreasonable that they cannot overcome their opposition to it, and hence their complaint. But as we have said above, teachers have often had just reason for condemning the results obtained by this method, simply and solely because inadequate, incomplete, or imperfect equipment has been installed to meet their needs. The plenum system of ventilation, when properly installed and run, is expensive, but it is only one of the many penalties we must pay for living in crowded cities and at the same time demanding for our school children necessary hygienic conditions. When people become more reasonable and are willing to accept and supply more natural conditions for children, our school buildings may approximate in form open air schools, and may even be located away from crowded, dirty, and noisy city life. Then, and not until then, can we expect to command at all times natural ventilation and dispense with the present difficulties and expense of mechanical systems. In addition to inadequate fan power, many errors are made by supplying ducts too small to permit a sufficient volume of air driven at the proper rate to supply the children. This is especially marked in large buildings where long ducts are necessary. They must be more than ample from a theoretical point of view in order to permit of such adjustments as winds and weather demand. If a system of ducts is properly balanced, the lines of least resistance will carry an undue amount of air, while those of greatest resistance will deliver an inadequate volume. This defect is a very common one.

Without going into further details, we can state with a reasonable degree of assurance that it is our judgment that few school systems have been so carefully served in these

regards as that of St. Louis. In all the large and modern buildings we have found two large fans, connected up with low-pressure steam engines, capable of forcing through the ducts the total volume of air needed. We have not been able to test whether the ducts are in all cases properly proportioned or not. Such test would have to be made in cold weather, both when winds are high and low. It is our conviction as the result of careful observation on all points involved, however, that unusual care has been taken to guard against all the difficulties mentioned above, and that the school buildings of St. Louis are as well ventilated as the best we have examined elsewhere. During the first half of June, when this part of the survey was made, each teacher was responsible for the ventilation of her room by the use of windows, as fans were not running. In a very large percentage of the hundreds of rooms visited the air was as pure and clean as conditions would permit. We noted in a few instances, especially in those classrooms with a south exposure, that the air was bad because of the fact that the shades had to be pulled down to shield the children from exposure to direct sunlight, and thus preventing circulation. Under the topic on lighting the question of southern exposure for classrooms will be considered more fully.

While, strictly speaking, the air-washing devices in use are not designed to regulate the humidity, intelligent janitors can use them to this end by properly tempering the air before it reaches the sprays and eliminators. We heard no complaint or criticism on air conditioning. Through the careful guidance and direction of the engineer, the head janitor should be able to manage this part satisfactorily. We, of course, had no means of testing the effectiveness of this part of the work. If, in some of the other buildings where windows are not properly placed either for ventilation or lighting, an electric motor were connected with the fans so that they might be used in very warm days, a definite advantage would accrue.

We made no attempt to judge of the effectiveness of the heating plant save by noting the methods used and the general condition of the boilers, radiators, and the building as a whole. So far as we could judge the heating of the permanent buildings has been well provided for. Doubtless there are separate rooms in some of the permanent buildings where at times heating is inadequate; but from all information we could gather little trouble in this regard has been met with.

The portable buildings, of which there were 114 in use, are equipped with hot air furnaces. These furnaces are large, and in many rooms special provisions have been made to distribute the heat over the room. The main troubles with these rooms are that they are likely to be very warm in hot weather, and the temperature in cold weather uneven in the various parts of the room. We noted the attempt to remedy these defects in some of the schools by insulating the floor against the inflow of cold air and by specially constructed ceilings to guard against the heat in summer and prevent the loss of heat in winter. The steel type of portables introduces these difficulties to a more marked degree than those constructed of wood. A mistake was made in using steel, for the initial expense is comparatively large and the difficulty of moving them likely to be greater. Naturally, all ventilation in these single classroom structures is effected wholly by the management of windows. In mild or average weather there is no reason why, if teachers are persistently careful to keep the classrooms well ventilated, the children should not be as comfortable and well cared for in these buildings as in classrooms of more pretentious structures. But these definite defects, and the added duty imposed on the teacher of regulating the temperature of the room and keeping ventilation in mind, dictates, we believe, that these rooms should not be used except as emergencies arise.

The use of portables away from a permanent building, such as is the case at the Cupples Center, makes it almost

necessary to use outside toilets, which in this climate introduces many difficulties. At the Cottage Avenue group, the children are compelled to cross the street to use the toilets in the Sumner High School. During bad weather this is a hardship on all; especially is it wrong to demand this of the small children. For these reasons and others, we have no hesitancy in stating that it is our judgment that these buildings should be used only in connection with permanent buildings for emergency classes, and where there is need for a permanent center, a permanent building should be erected.

Lighting

In the latitude of St. Louis, all classrooms with east or west exposure, having a glass surface equal to at least one-fifth of the floor surface, will command sufficient light, providing the windows are properly set, and the rooms are of the proper size and have the proper ratio of length to width, and proper height. Windows should be set so that the bottom of the lower sash should be 4 feet above the floor. This is demanded for the sake of the care of the vision of the children. When a pupil is seated at his desk all the light should enter the room above the level of his eyes, thus adjusting his accommodation to the light reflected from his work, rather than to a stronger light from the outside. In kindergarten rooms and those designed for the first grade it is allowable to make the distance from the floor to the bottom of the lower sash 3½ feet. But since it is often the custom to set them all uniformly at the same height above the floor, 4 feet is generally the safer figure to allow.

All of the newer school buildings are well lighted, except those which are situated on lots which make it almost necessary to run the main axis of the building from east to west. The lighting of nearly all the old buildings is faulty in that the windows are improperly placed and erroneously spaced.

Experience has proved beyond the shadow of a doubt that

those classrooms which get other than east or west light will not prove satisfactory in the latitude of St. Louis. The south light is satisfactory for laboratories, offices, libraries and other rooms where students are not required to occupy fixed positions; but it is very trying in classrooms, both for the classes in the elementary schools and in high schools, except where the classes in the latter are small. North light is best for artrooms and those devoted to drawing. But classrooms with north exposure are not otherwise satisfactory, because of the lack of the purifying influence of direct sunlight, and also because on dark, gloomy days in winter there is an insufficient amount of light, especially for those children who sit at some distance from the windows. East or west light is the only justifiable light for regular classrooms, because in either case the sun's direct rays may in early mornings or late afternoons sweep over the entire room, thus purifying the whole space, while during the day the light is mild enough to avoid glare. A classroom with a southern exposure renders the problem of lighting and window ventilation very difficult. On clear days shades must be drawn to exclude the direct sunshine from the desks of those children who sit close to the windows, and when this is done those who sit furthest away from the windows are generally working with insufficient light. We made particular inquiry of those teachers who were working in rooms with southern exposure concerning these difficulties and found without exception that they had not discovered any satisfactory way to meet them. During the time we were inspecting the buildings the weather was generally warm but not excessively hot. The shades in rooms with southern exposure were drawn during at least three-fourths of the day, and the ventilation was noticeably interrupted as a result. Despite the fact that most of the days were bright, when the shades were drawn those children furthest removed from the windows were working at a disadvantage. This was especially marked in those classrooms more than 24 feet wide.

The shades furnished are of good color, and are kept in good repair. But no shade has been invented that will exclude the direct rays of the sun and at the same time permit sufficient light to pass through them to illuminate the side of a room which is opposite to the windows.

All shades we examined are set to pull down from the top, and when drawn they thereby make it almost impossible to allow the exit of warm air from the top of the room; indeed, when a breeze is blowing from the south, the upper sash must be closed to keep the shades from rattling or being torn. As a result, in such rooms the teachers come to depend on the lower half of the windows for ventilation. This of necessity impedes circulation and renders adequate ventilation by windows more difficult. When classrooms have eastern or western exposure, this difficulty is much reduced. The direct sunlight disappears from the east rooms by the middle of the forenoon session and does not enter the west rooms until almost time to dismiss classes. Thus the teachers in these rooms have little trouble with shades and can also command better ventilation.

We therefore commend the effort which has been made to build on lots admitting of this method of lighting classrooms, and at the same time express the hope that in the future this hygienic demand will be adhered to without variation. No lot should be selected for a school building which will make it necessary for the architects to place regular classrooms on the south or north sides of a building. Rooms other than classrooms can be treated as suggested above.

The general demand for unilateral lighting for all regular classrooms has been carefully followed in all new buildings. Those that were built from twenty to forty years ago have windows on two or more sides. They were built before careful attention had been focused on these problems of lighting, and while these buildings were substantially constructed they were badly planned when judged by modern hygienic standards. Some of them could be modified with-

out much expense to conform to present standards. But in others where the rooms are too wide, measuring from the side from which the prevailing light comes, the only expedient which can be suggested to correct the deficiency is to group the children near the windows and correspondingly reduce the number in each room.

The most difficult requirement for architects to meet, with respect to the proper lighting of schoolrooms, is the placing of windows. Hygienic demands not only place them closely together on the left side of the children, but group them as much as possible in the rear of this side. That is to say, this hygienic demand and the architectural demand of balance are in conflict. A classroom 32 feet long and 24 feet wide should have approximately 160 square feet of glazing in the windows. Five windows 8 feet long and 4 feet wide will meet this requirement; but these five windows should be so placed in the wall as to allow about 7 feet of "dead" space in the front of this side. Consequently windows set in accordance with this demand will not balance when observed from outside.

The school buildings in St. Louis, both old and new, exhibit an unwillingness of the architects to sacrifice "balance" to meet this need. This is true in practically all cities in the country. The demand for the best placing is reasonable, but thus far school architects have in the main resisted. Some day it may be possible to insist that the comfort and health of the children should take precedence over "balance," or that architects should devise means of satisfying both demands.

School Desks

The classrooms of the elementary schools are fitted in the main with a cast iron double-legged desk with seat in front. Some of the schools have other patterns. The best desks in use are the so-called St. Louis desks. These are steel-framed, one-legged desks, and are fastened to the floor

directly under the middle. These also have a seat and desk top combined in one piece, with the seat in front.

In many of the classrooms, where two or more different sizes of desks are necessary to accommodate the children of different heights, the largest desks were placed in rows from side to side. This arrangement is not the best that can be made. Desks of the same size should be set in a row from the front to the back of the room. The reason for this demand is that where there are different sizes in a row from the front to the back, either the seat or desk will be out of adjustment for the pupil who occupies a seat of one number and uses a desk top of another. This method of setting desks may at times scatter a section slightly, but generally it is more likely to consolidate sections and save the teachers' time in directing the study of pupils and in hearing recitations. But the one chief advantage comes, as suggested above, from fitting a child *with* a seat and desk, rather to one or the other.

Personally, the writer believes that the time has come for a new type of school desk or chair which will have a desk top with a slant much greater than is now generally acceptable, and that more attention will be given to adjusting the seats and back rests to well-developed girls in the upper grades and high school; but this problem is just now in the process of solution. The work now being done through the efforts of the American Posture League promises help in the near future.

The desks were in good repair, and carefully used. There were few evidences of markings, whittlings, or any other disfigurements.

In commenting on the good repair of the desks it is appropriate to describe the shops which the Board of Education has developed. Here in one center all manner of repairs and refinishings of furniture are made, and much new equipment designed and constructed. In addition, worn school books are cleaned, lost parts restored, new bindings put on

and literally hundreds of other things done to keep the buildings, equipment and instruction in a high state of efficiency. When something goes wrong with plumbing, it is possible to have it fixed with the least possible delay. In the same way, heating appliances, glazing, and all the multitude of immediate needs incident to a large system of public schools can be attended to without red tape or delay. We have nowhere seen a more perfect organization developed to meet such emergencies or serve for general upkeep than we found in St. Louis.

Disturbing Noises

As our cities increase in population and commercial importance, disturbing noises, incident to traffic, manufacturing industries, and almost numberless other activities, have so increased in kind and volume that it has become a matter of very serious concern to find a quiet and otherwise acceptable place for school buildings. Furthermore, buildings that were once free from such disturbances and distractions, may by reason of changes in the neighborhood become almost impossible places in which to carry on quiet and undisturbed school work. We hold therefore that it is a paramount duty of school authorities both to select quiet locations for school buildings, and to guard vigorously against objectionable encroachments later. No school building should be located on a car line; neither should a street, upon which a building has been erected, be appropriated for a car line.

We grant that it would be impossible now in most if not all American cities for Boards of Education to command this power, because of the prevailing easy neglect of public needs for the sake of private gain. But it is high time to cry out against noise that comes to the children. There are many school buildings in St. Louis, as in other cities, in which it is at times more than difficult to conduct recitations as they

should be conducted, or even to study undisturbed, because of the harrowing noises from the streets.

When children and teachers must live and work in this confusion day after day, not only is time and money being wasted, but the best results they are striving for are doubly difficult to attain. Some way must be found to shield the children from these nerve-racking and wasteful disturbances. We do not wish to suggest that St. Louis is sinning against her children in this regard more than other cities. Possibly she is doing better. No definite and concrete comparisons can be made because little has been done to find units of measure generally applicable. But because St. Louis has, in an educational way, done so many things uncommonly well, it should be urged that this matter of disturbing noises be seriously considered. Her educational work is her biggest public undertaking, and should be dealt with accordingly.

School Baths

There is so little need for baths at school in most sections of St. Louis that it would be a questionable use of public funds either to provide rooms for them in the elementary school buildings for such districts, or to equip such rooms with fixtures. In these sections of the city the children have access to baths at home and are otherwise generally well cared for. On the other hand, in those crowded sections where the poorer classes are huddled together in tenements or out-of-date houses, a large percentage of the children have no opportunity at home to get a cleansing bath, and the Board of Education has installed in the regular elementary schools acommodating such children sanitary bathing facilities and employed attendants to supervise the children and manage the showers while they take a bath. In such schools each child is sent to the bath at least once a week, and if conditions demand, oftener. We wish to commend this

undertaking on the part of the Board as both wise and just, and so far as we could learn their action has been acceptable to all concerned. There can be no doubt that it is most important in the education of children to train in both the theory and practice of cleanliness as vital to health.

KINDERGARTEN ROOMS

St. Louis is the birthplace of the kindergarten movement in America, and the first public school kindergarten class was organized here. Through all the years since, this phase of public education has enlarged and developed until every permanent building for elementary schools now existing in the city is supplied with a large room accommodating at one time at least two full classes or sections. These rooms are beautifully and tastefully decorated and furnished, well lighted and ventilated. A few cities have some kindergarten rooms as good as the best in St. Louis, but taking them as a whole, they are the best and most tasteful we have seen, either in America or Europe.

CORRIDORS IN THE NEW BUILDINGS

We were very much interested in the wide, well-lighted halls or corridors in the newer buildings. They are among the most attractive parts of the buildings, for in every building they have been decorated with one of the best collection of prints, photographs and statuary we have seen in public schools anywhere in the country. We have never seen halls as a whole better kept and more respected. They thus serve as a definite and decided educational agency in that they offer daily suggestions of beauty and fitness in art. But in addition to their use as halls and art galleries, we observed that they were generally used in physical education work, such as drills, folk dances, and calisthenic exercises. In these they are far more acceptable to both teachers and pupils

than classrooms can be, because in the latter desks are in the way and freedom of movement hindered. While the cost of wide halls is certainly to be considered, we believe that they in no way represent a waste of funds, and do serve many useful purposes.

CHAPTER VI

THE USE OF ELEMENTARY AND HIGH SCHOOL CLASSROOMS

By S. O. Hartwell

Summary[1]

This report deals with the present use of classrooms and the possible readjustments which may be considered. It gives the details of registration and attendance and shows how grave is the problem and how difficult of readjustment.

The high school, especially of the cosmopolitan type, offers a difficult problem of adjusting use to structural requirements.

Mr. Hartwell emphasizes the close relation between the course of study and the building equipment in which this course is administered. He then gives some concrete illustrations of readjustments which might be tried. These readjustments call for radical modifications in the course of study and because of the present congested conditions in the elementary schools offer no financial relief.

[1] By Chas. H. Judd, Director of the Survey.

THE USE OF ELEMENTARY AND HIGH SCHOOL CLASSROOMS

When St. Louis began to build school houses their construction and arrangement were comparatively simple. Now the complex demands of modern city life are reflected in school housing. There remains, of course, the fundamental need to furnish seating and recitation room for the number of pupils to be accommodated. But the standards of lighting and heating, of ventilation and of sanitary equipment have entirely changed. Beyond this, as new lines of study and new school activities have found their way into school life the requirement of special rooms and special equipment has become exacting. Accommodation for special uses is now as imperative a factor in settling the plan and size of a school building as is the number of pupils to be housed. In other words each new building, or at least each change in a building program, brings in the question of the course of study to be followed.

Most American cities have passed through two stages in school house construction and are entering a third. When the curriculum was simple, provision for the requisite number of pupils on the prevalent housing standards met the school need. Later, municipalities took pride in providing special rooms for auxiliary school uses without much thought concerning a time provision in the curriculum which would insure their adequate use. A gymnasium, for instance, was provided for after school use, or an expensive auditorium was built to be occupied only a few times each month. But cost of construction grew and the auxiliary demands increased, until now the vital problem is that of making reciprocal the two factors of accommodation for numbers and accommodations for varied use. The ques-

tion of housing the school children of St. Louis is, then, to be considered from these two points of view.

When we take up the problem of numbers it is difficult to set forth the situation in any general figures. The report of the Superintendent of Schools states the average number of pupils in each of the elementary classrooms in the city. This number is given in the annual report of 1914-15 as 40 (page 363) for the white schools. In securing this average figure all of the children belonging to the elementary grades and kindergartens are divided by the average number of teachers having charge of classes throughout the year. The result is accepted as an indication of the average size of the classes under the control of these teachers. On page 37 of the same report is a comparative historical table which does not include the kindergartens. This shows an average class in the white schools of 43 for 1914-15. It also shows that the average has been somewhat reduced in recent years. But the work of a teacher and the progress of an individual child are not shown in averages. They depend on the local situation in separate rooms.

If one examines the detailed figures, it appears immediately that there are certain upper classes in the various school buildings which are much smaller than the average class, and there are certain schools in which the classes are small. These smaller schools and classes tend to produce an average which is much lower than the figure which should be set down if one is to describe the very difficult conditions under which a large proportion of the teachers in the city are doing their work. A much more just statement of the situation appears when a full table is given showing the number of pupils in the various classrooms. Such a table appears herewith. In order to secure these figures each school building was called upon to render a report of the number of pupils enrolled in each grade on April 18, 1916, and on May 17, 1916. Furthermore, these

schools were asked to report the number of children in actual attendance during the forenoon and afternoon of these two days. The number of rooms reporting an enrollment of twenty or fewer pupils was then counted up for each of the days and is set down in the table. Thirty-two at the head of the left hand column entitled "Number of classrooms having each enrollment" means that there are thirty-two rooms which had an enrollment of twenty or less pupils on the eighteenth day of April. Reading down this vertical column, we find that there are 31 rooms which had from twenty-one to thirty pupils enrolled on that day.

TABLE I

Enrollment or attendance	April 18, 1916			May 17, 1916		
	Number of class rooms having each enrollment	Number of classes in which foregoing attendance was reported A. M.	Number of classes having foregoing attendance in P. M.	Number of classes having foregoing enrollment	Number of classes having attendance in A. M.	Number of classes having attendance in P. M.
20 or less	32	153	153	31	40	40
21 to 30	31	155	145	34	79	83
31 to 40	255	585	546	298	520	537
41 to 50	955	638	660	918	818	782
51 to 60	299	39	47	266	83	81
61 or more . . .	15	0	0	12	1	1
Median	46	39	40	45	42	41
Number of schools Reporting. . .	104	103	102	101	100	99

There are fifteen which have sixty or more pupils enrolled. Not only, so, but if we look in the next vertical column, we find that the number attending in the morning and afternoon on April 18 though somewhat smaller, still shows a very heavy load in many class rooms. This date was picked

out at random and turned out to be one of the Hebrew holidays on which a number of the schools were almost without pupil population.

May 17 exhibits a normal situation. If we look at the second column from the right in the table we find such facts as these. In eighty-three classrooms there were in attendance on May 17, between fifty-one and sixty pupils. In 818 of the classrooms there were between forty-one and fifty pupils in actual attendance.

Moreover, a closer tabulation shows that of the 955 rooms reporting enrollments of from 41-50 on the list, 524 have more than 45. Of the 1587 rooms reporting at that date 838 enrolled more than 45 pupils each. The complete table of such rooms is as follows:

Enrollment	No. of rooms reporting this enrollment
46	105
47	128
48	127
49	74
50	90
51	62
52	70
53	46
54	40
55	29
56	28
57	8
58	7
59	8
60 or more	16
	838

So while the average enrollment for the last semester is about 42 the median noted in Table I is 46 (April 18), which means that there were as many rooms above as below that figure. May 17 shows a slight reduction, but the enroll-

ment always falls off toward the close of the term: thus, April 18 gives a better index of enrollment conditions throughout the semester, while attendance conditions prior to May 17 would probably show a slight increase over the figures tabulated for that date. In interpreting these figures it should be borne in mind that a school cannot make its arrangements merely with reference to the pupils in actual attendance on any given day. A child who is enrolled in a class but is for some reason absent for a day must be provided with a seat, and the teacher must be prepared at any time to take care of the needs of this child. Indeed, in view of make-up exercises, absence is likely to make a child a burden rather than a relief in the classroom. On his return he counts, so to speak, for two units of work instead of one, if the teacher is to bring him "up to grade."

The fact is, therefore, that a very large number of teachers in St. Louis schools are obliged to deal with more than forty pupils every day and to take care of a margin of children who are irregular in their attendance so that the total enrollment of the class is in many cases as high as fifty or sixty. These children are taught in recitation divisions of about half the size of the enrollment. The teacher, therefore, has the problem of keeping half of the class in order and at work in study or some form of seat work while the other half of the class is being carried through a recitation in some one of the school subjects. Reduction of enrollment would not change this method, but relief from an overload of numbers would greatly reduce the difficulties involved.

The writer visited a large number of classrooms. It may be well to record in addition to the facts shown in the table some of his typical observations. The following quotations from notes made on visits to various buildings indi-

cate some of the actual conditions which he found in a number of buildings:

May 19 D— Building crowded. Several rooms 50-55
May 22 S— 12 out of 22 rooms membership of 50+
May 22 G— 3 very heavy rooms
Enrollment 55-50 present
56-52 present
50-45 present
May 23 W— 57 in first grade room—52 present
54 in third grade room—53 present
50 in each of two other rooms.

This condition of over-population in different rooms is, undoubtedly, well known to the superintendent and his assistants. The fact that average enrollment has been reduced in recent years shows that effort has been made to better the situation. Yet it is still manifest that more than half the grade rooms in the city have too large an enrollment. This condition can only be relieved through providing more classrooms. As these are provided the seating unit for the primary grades should be reduced. It is now 54 desks to a room in most of the buildings. What is the proper number of pupils? No one has established it, but there is now practical agreement that anything over 45 is improper. A maximum of 45 would bring the average membership close to 40. Very few cities now plan to equip new rooms for more than 42 pupils, though the truth to tell, most of them frequently find holding to that number impossible. We can definitely recommend that the schools of St. Louis strive to bring average grade registration to 40 as soon as possible.

Registration, enrollment and attendance figures are so subject to variations in definition or in compiling that comparisons between cities are somewhat unsatisfactory. But the best figures obtainable show St. Louis high up on the crowding scale. On page 37 of the Board report for 1914-15 is a "membership table" which shows the average member-

ship per teacher, 43 in the white schools, 42 in the colored schools. In Clark's "Financing the Public Schools,"[1] p. 49, is shown the average daily attendance per teacher in 18 cities. St. Louis with 38.3 pupils per teacher is highest but one in the list from the point of view of crowding. The figures are compiled from the report of the United States Commissioner of Education. The same table, one may say in passing, shows that the average in New York and Philadelphia is lower than the St. Louis figure. Chicago's average is almost equal to that of St. Louis. There is sometimes a disposition to discredit the accuracy of Bureau of Education Statistics. But they are gathered by direct report from each city and it is the fault of the school people themselves if they are incorrect. The percentage of error is probably not unfair to St. Louis in this case.

The larger the burden imposed upon the teacher, the more cheaply the school system as a whole can manage its work. Indeed, if we consider the various possible sources of economy in expenditure this is one of the most effective. Economy in teachers' salaries mounts up very rapidly when the number of children given to each teacher is increased. St. Louis would have a much more expensive school system if the number of children given to each individual teacher were not, as is indicated by the above table, unusually large. Evidently in the elementary grades the system ought to be more expensive than it now is, if the best school work is to be secured. That present results obtained in the classes are of a high order, as other parts of the Survey report indicate, is a tribute to the good quality of the teaching staff.

St. Louis ought to go much further than in recent years in reducing the number of children per classroom. If the recommendation were followed of reducing these classes to the size of classes common in other school systems, there

[1] Cleveland School Survey, published by the Cleveland Foundation.

would probably have to be erected immediately in the city of St. Louis a large number of new buildings to accommodate the children who by this process of redistribution would be taken out of the classrooms in which they are now at work.

This does not represent the whole of the problem of provision for attendance in the city of St. Louis. According to the practice of the Board of Education, whenever a new school building is to be erected, the first step consists in setting up on the site which will probably be occupied by the building later a number of portable buildings. These portables are, in point of size, large enough to accommodate a single grade of 48 pupils. They lack many of the accommodations that would be put into a permanent school building. They are one-story single structures in which children of a single grade can be accommodated with one teacher. If the climate of St. Louis were more rigorous in winter, it would not be so easy to use these portable buildings. Indeed, the heating and toilet arrangements in the buildings, while made as satisfactory as possible, are not as satisfactory as the heating, ventilating and sanitary arrangements in a permanent school building of the modern type.

These portable buildings are gradually increased in number until a sufficient number of children are accommodated to justify the erection of a new building. At the present time there are approximately six thousand pupils of the school system in those portable buildings. In May, 1916, there were the following "portable centers:"

TABLE II

Alabama Avenue	7	Garnett	4
Bircher Street	3	Hamilton	11
Canterbury Avenue	4	Kingshighway	5
Clifton Heights	5	Lindenwood	3
Cottage Avenue	9	Morganford Road	5
Cupples	8	Penrose	10
Devonshire	4	Shenandoah	9
Duncan Avenue	8		
Gardenville	5	Total	100

A similar tabulation from the report of the Commissioner of Buildings published a few months earlier gives 92 portables at these centers, while others scattered at different buildings which were congested brought the total number to 114.

The quality of instruction in these portable buildings probably does not fall below the quality of instruction in the regular buildings, but the city cannot look upon the portable buildings as a permanent solution of its school problem. For these six thousand children, therefore, as well as for the purpose of redistributing the various grades, it is necessary for St. Louis to consider immediately the necessity of erecting new school buildings.

In this connection it is important to note that the building program which has been followed in the city during the last half century shows great irregularities in the different decades. The following table shows the rate at which school buildings have been erected for white children and for colored children since 1859:

TABLE III

	Number of White Schools	Number of Colored Schools	Total
1859-1870	8	.	8
1871-1880	10	2	12
1881-1890	5	0	5
1891-1900	24	3	27
1901-1910	28	0	28
1911-1916	5	1	6
Total	80	6	86

Table IV shows the relation of the city building program to increased registration. The facts in the tables are taken

from the historical data on registration given in the statistical reports of the Board and from the building lists found in the report of the Commissioner of Buildings.

TABLE IV

INCREASE IN TOTAL REGISTRATION AND SCHOOL BUILDINGS
ST. LOUIS PUBLIC SCHOOLS

By Decades from 1871

	1870-71	1880-81	1890-91	1900-01	1910-11	4 years through 1914-15
Enrollment	27,587	51,581	59,693	79,274	88,887	99,446
Increase in 10 years. . . .	.....	23,994	8,112	19,581	9,613	10,559
No. of Grade Buildings erected in ten previous years	.....	12	5	27	28	6
No. of High School Buildings	.....	.....	.....	1	4	1*

*Grover Cleveland School built and Central High remodeled.

Figures at hand are for the four years through 1914-15. The enrollment for the current year will be practically the same, and as the Bryan Mullanphy building is included in the six buildings counted, figures are practically correct for the five years including 1915-16.

Of the sixty-one buildings completed in the last 25 years 6, or only 10% have been erected since 1910. Yet when we compare the enrollment for 1915-16 with that of 1890-91, the proportion of increase falling within the last five years is 17.7%, while the absolute increase between 1910 and the present time is over 10,000 pupils. These figures would justify, on present plans of building ten twenty-room buildings within the last five years instead of the six that have been built.

Practically 70% of the entire equipment of the Grade buildings referred to in Table III have been built since 1880. Of the remaining 30% two or three buildings have had large additions in recent years and almost all have been to some extent rebuilt, especially with a view to making halls and stairways fireproof. Few buildings erected more than thirty years ago have good school conditions when judged by modern standards. The St. Louis buildings of this earlier date are better than the average of school buildings of their type. They have been kept in very good repair by the building department and are at the present time in thoroughly serviceable condition, with the exception of the Bates School, which is soon to be replaced.

In securing a building situation of this sort St. Louis has found it necessary, as indicated in the financial report, to spend a relatively large amount of money in the maintenance of its building department. It is not necessary at this point to go into the details of expenditure in this matter. It is enough to point out that St. Louis has been very energetic in introducing into all of the newer school buildings the best modern sanitary features as well as excellent general equipment. The contrast between older buildings and new buildings is therefore very marked.

It was the writer's privilege in May last to make brief visits at more than sixty schools, inspecting the buildings under ordinary routine conditions. In general, conditions of care were excellent. In but two cases was untidiness or evident carelessness in janitorial work noted; in one of these the building was old and in poor condition. Lawns in front of the buildings were in general well cared for and in most cases handsome in appearance. Playgrounds have been so thoroughly paved and fenced that most of them are unsuited for the best results. Surfacing of a playground used by large numbers of children is a puzzling matter, especially when the soil is of the St. Louis variety

of sand and clay. But brick paving is unsuitable. Gravel is apt to be rough and is hard to obtain. The newly finished grounds of the Bryan Mullanphy buildings are the best of those visited. These are coated with gravel. Recent experiments at Cleveland seem to show that the most satisfactory playground surface yet secured is a foundation of limestone screenings or gravel with a binder of glutrin. Space for marching and formal gymnastics seems so far to have been the main item considered in arranging the St. Louis school yards. Real play and its reasonable correlation with school work have not yet entered into their own in the St. Louis playgrounds.

Thus far we have spoken at some length of the elementary school buildings. We turn now to a consideration of the high schools. Here the experience of St. Louis is similar to that of most cities of the middle west in the last twenty years, but the size of the city makes the local increase in high school registration most impressive. In 1900 St. Louis had but one public high school. Now six buildings are filled beyond the maximum numbers for which they were planned, while the enrollment and the consequent demand for more room are still growing. The energy with which the high school problems has been met and the equipment provided for the various courses are highly creditable to the management of the schools and to the city. In a subsequent section of this report tables will be presented showing what is true of high-school buildings in all cities, namely, that the use made of individual classrooms is by no means as complete as the use which is made of elementary-school classrooms. The recitation rooms in high schools are likely to be larger than necessary for the accommodation of all of the classes. The remedy for this is not simple; it involves difficulties in building construction, and problems in the course of study and in the arrangement of recitation divisions. These have several factors of varia-

bility. Since different classes are accommodated in these rooms at each hour of the day it is not possible to calculate with any degree of precision just how many desks are needed in a given high school classroom. It would appear from the statistics which are supplied in the later sections of the report that the high schools are in need of a number of smaller recitation rooms.

The usual plan of high school buildings, when large assembly halls are not included, provides some rooms slightly larger than those built as elementary grade rooms and other smaller rooms planned for recitation groups of from twenty-five to thirty-five students. So far practical difficulties in construction have prevented any frequent use of a third and smaller unit for the smaller classes. One of these difficulties is the requirement in school buildings which makes it necessary to have each room open on a corridor. Another is the proper arrangement of beams and supports; a third is the fact that the cost of regulation for heat and ventilation is as heavy for a small room as for a large one. In brief, architects seem to think that the increased cost of providing small rooms offsets the economy which would result from their use. Meanwhile in St. Louis as elsewhere the large rooms which are now built in these buildings are unnecessarily commodious for many of the small advanced classes. In St. Louis this is not only true for recitation rooms but emphatically so for some of the shops.

One simple building device would help to overcome this lack of flexibility in high school buildings and often also in grade buildings. It is hard to persuade architects and school boards to make two doorways from corridors to standard school rooms. Every opening means added expense. But frequently the extra door would make possible at moderate cost division of one room into two smaller rooms when that need develops.

Furthermore, attention will be drawn in a later section of the report to the fact that the organization of the St. Louis high schools is complicated by the fact that these are cosmopolitan high schools, offering to each child the full range of elective opportunities which can be offered in any of the high schools in the city. The distribution of opportunities to all sections of the city makes it impossible to concentrate the students who want certain subjects in a given high school. The result is that the classes in a system of cosmopolitan high schools are likely to run very much smaller than they would in a high school system where the different schools offer different kinds of opportunities.

The writer is a firm believer in the value of the cosmopolitan type of high school, the type which St. Louis has helped to develop. He also has held to the opinion that a school of from one thousand to twelve or fourteen hundred pupils was preferable to the larger units sometimes found. Schools of that size have been the aim of St. Louis. Yet there is serious question whether the cosmopolitan plan, with its duplication in separate units of expensive equipment for the varied lines of work, does not necessarily involve planning for a larger enrollment than has hitherto seemed desirable. In other words, the relative number of classrooms, to shops and laboratories in a given building should be increased if we are to secure thorough building efficiency. This means at once higher enrollment capacity. The possibility of molding a large enrollment into a unified school of fine spirit with serious purpose and evident good management is illustrated by two at least of the St. Louis high schools. And the spirit of the others is good, so that in the writer's belief a few hundred more in each building could be easily assimilated if building accommodations permitted.

Before coming to the point of making any recommendations, it is necessary to call attention to one phase of the

problem which has been dwelt upon in a number of the reports of the Superintendent. The school population of the city of St. Louis is steadily increasing. Furthermore, the sections of the city which a few years ago consisted of vacant lots are now being filled up with homes and the demand for schools is being created in new sections of the city. For example, one section of the city which for a time was fully accommodated by a two-room school building has suddenly enlarged to the point where the building is full and there are a number of portables in the yard which will shortly have to be replaced by a permanent building. This situation is typical of a number of different centers in the city. The districts in the heart of the city where formerly school buildings accommodated a reasonable number of children are gradually being depleted of their pupil population by the fact that business houses are taking the place of the homes that formerly were located in these sections. This shifting of residential centers will always complicate a city's building program. Yet the Board of Education must follow the centers of population with suitable accommodations for the children. An increase in the school population of one per cent would require the erection of a new building to accommodate the increase in pupil population. The city has therefore arrived at the point where it should have a comprehensive building program looking well into the future. This building program must make it possible to go on securing sites as the Board has done in the past. Buildings must be put up where they are needed and they must be suited in capacity to the gradually increasing pupil population of the city.

Quicker abandonment of portable centers might be secured, without undue risk of over-building in a given section of the city, by developing the plan of erecting grade buildings in units of 10 or 12 rooms, this equipment to be subsequently doubled if the demand continues. This plan

has been worked out in some places. The record of the Board in past years in the matter of school buildings is very extraordinary. All of the buildings now in use have been erected without the issuing of any school bonds. An expenditure of seventeen millions of dollars since 1880 has been made by the Board in providing grounds and buildings and in erecting the portables which now constitute the tangible evidence that the future program must be more energetic than it has been for the last five years. Indeed, during the last decade only those buildings for which provision was made before have been erected. It may be said with all propriety that the building program of the Board has been practically at a standstill during this period.

From the facts already presented it seems clear that St. Louis faces the immediate need for a large increase of building accommodations for the grades and the prospect of continued growth of high school requirements in the same line. This means prompt adoption of a building program, unless ways can be found to increase accommodations for enrollment in present buildings. Can this latter be done? There are several plans to accomplish this which have been tried out in different parts of the country. One of these alternative plans has been accepted and acted upon already in the high schools of the city. The number of hours in the day during which the building is used has been somewhat increased. It is possible in connection with the elementary schools to adopt the same general plan of accommodating part of the children during the morning and another part in the afternoon. In most cities where this device of half sessions has been tried it has not been regarded as satisfactory. It leaves many of the children on the street for part of the time under conditions that are decidedly disadvantageous. In general, wherever the necessity has arisen of doubling up the use of the school building it has been found better to adopt a plan of successive exercises of different types.

The writer is familiar with one way of doing this which has been called the platoon plan. According to this plan the children of a grade or division are assigned to one teacher for most of the work in the traditional school subjects such as reading, arithmetic, history, spelling and so on, for the other exercises of the type which are to be described as newer lines of work such as music, physical education, and manual training, they are somewhat differently distributed. A teacher of the traditional subjects can by such an arrangement as this deal with two groups of pupils in a day while special teachers of music, physical training, and so on have a succession of different divisions at different periods. The pupils under this plan are accommodated all day, but are with the teacher of the academic subjects for only half of each session. She has the remaining time to take care of a second group.

The writer has made a careful study of the possibilities of readjustment of this sort in the elementary schools and high schools. It is a mistake to assume, as some people do, that readjustments of this type can be made by merely shifting children from place to place. The fact is that every change in the classroom situation means a change in the methods of work and even in the course of study. The present room distribution is part of a thoroughly established system. The present room distribution and the present course of study fit each other. In the high schools, by lengthening the day, about as much has been done as can be unless more class rooms are provided.

Suppose we consider nothing but the housing and regard the course of study and the methods of work as quite flexible. We may then suggest such facts as the following regarding present grade buildings.

St. Louis buildings are planned for an eight-grade elementary school with kindergartens. Practically all schools have an unusual amount of space for the kindergartens.

Indeed, the kindergarten seems in a sense overdeveloped. The large, beautiful rooms are frequently crowded with an enrollment of 75-100 in a session. The director has of course, extra assistants, but numbers defeat the kindergarten purpose especially in the districts largely foreign.

Fifteen of the buildings have well-equipped gymnasiums; fifteen more have play rooms that could be equipped. There are sixteen grade centers for manual training and domestic science. Four buildings have auditoriums. These with the exception of the bathrooms established in certain schoolhouses are practically all of the extra rooms. As mentioned above most of the kindergartens are already used to their capacity. The manual training rooms are usually centers for several buildings and in that way are filled most of the time: the margin for further accommodation is small. The gymnasiums and play rooms remain. They have a large margin for additional use during school hours.

The course of study in the regular grades is of a well known type. It includes the traditional elementary subjects, music and drawing, with some gymnastics and some handwork. Manual training for the boys and domestic science for the girls is given at various "centers" to the pupils of the upper grammar grades. The regular teacher has her work and attention distributed and is under direction from several supervisors of special subjects.

The platoon plan of organization increases the grade room teachers' responsibility for numbers and for regular work but relieves her of the special subjects, some of which she is apt to dread. It gives these subjects to special teachers interested and trained in these lines and usually provides rooms specially equipped. It makes such rooms as gymnasiums and shops available throughout the day's program and thus increases the usefulness and frequently the capacity of the building.

Suppose we have a twenty-four room building with play rooms and gymnasiums—some St. Louis buildings have two

of each. They are on the ground floor, and are unavailable as grade rooms, but thoroughly sanitary, well-lighted and usable for successive divisions in special activities. Some of the playgrounds could easily be equipped as manual training rooms.

A platoon program is somewhat complicated for first grade pupils. Leaving four primary rooms on the usual program we shall have twenty rooms of pupils to care for under the platoon plan. If the daily time schedule has ten half-hour periods the twenty divisions will be accommodated in ten rooms for the so-called regular classes, and ten teachers will do the regular academic work. But the ten divisions displaced must be housed and cared for in special activities. One room will be used throughout the entire school day for classes in music, another for classes in drawing; two rooms will be needed for the literature classes which take over and enlarge part of the ordinary grade work in reading and story-telling; the gymnasiums will be in constant use. Frequently divisions can be combined in physical training so that gymnasiums and playgrounds can accommodate at least three groups. Two more rooms will be used for, we will say, special work in penmanship or nature study, and for study groups. In the latter there is again some chance for combining divisions and thus saving space in occasional time-periods. We still have the manual training room or rooms for the one or two divisions not already placed. Thus we have used twenty building-spaces for the twenty divisions. But three or four of them are the auxiliary rooms: hence three or four classrooms are unoccupied and are apparently available for further enrollment.

Now under ordinary circumstances this sort of thing can be done, with the economy in building use just shown. [We note in passing that the discussion from the point of view of room-accommodation has introduced several modifications in the arrangement of curriculum.] Naturally any

such plan must meet the proper tests as to its educational value and also regarding costs other than building cost. We cannot here undertake detailed discussion of these points. But it has been shown in practice that under ordinary conditions the details of administration can be easily arranged. The time allotment for the regular academic work varies surprisingly little from that secured under the customary plans. Results in regular work evidently hold up to previous results, while teaching and progress in the special subjects show clear gains. Moreover, the spirit and accomplishment of the teaching force is helped. The regular teachers are freed from the troubles of dispersed attention to several lines of work and supervision. The special teachers are working in the lines of their individual interests and training.

Costs are so differently distributed in different school systems that only a general statement can be made. There is some expense for equipment. This, however, is slight compared to the cost of an additional schoolroom. In a school of more than a dozen rooms the teaching force is not increased, special teachers may have a higher salary schedule than regular teachers. Yet the variation there is slight and cost for supervision can be lessened.

But the main difficulty in St. Louis is that enrollment conditions are not ordinary. An essential of the plan is that one regular teacher cares for two groups. This is done without overload if the total enrollment for the two groups runs from seventy to eighty-five pupils. Perhaps it could reach ninety and still balance in its advantages the present method. Putting it another way two rooms of from thirty-five to forty-two pupils can be comfortably combined. Above that there is an overload on the regular teacher. The facts that 300 schoolrooms in St. Louis now have fifty or more pupils enrolled and that more than half of the elementary rooms enroll forty-six or more have al-

ready been emphasized in this part. Responsibility of the grade teacher for from 92 to 110 pupils is too heavy an overload. The only chance for any plan of this sort to succeed in St. Louis is through the reduction of room enrollment—which at once reoccupies the rooms apparently saved in the description of the platoon plan as just given.

A single illustration will show the application of the plan in St. Louis. At one of the buildings one portable has lately been added because of overcrowding. This building has for the third quarter an average enrollment of 1066 in 23 rooms or almost 46 to a room. It has two play rooms and two gymnasiums whose use is only occasional. It has a good yard, though paved, and hence badly arranged for play. Let us reduce the average enrollment to 38, and call on the regular teacher to take care of two shifts in a day. This would give the regular teachers in the platoon rooms 76 pupils each to carry forward in the regular subjects. We shall leave the first grade untouched except to reduce its rooms to an average of thirty-eight. The 1066 pupils will then be divided into 28 groups. We shall have say 4 first grade rooms. There would still be 24 groups to care for; 12 platoon rooms accommodate these in the regular subjects. The other 12 must be cared for in special rooms; three can be accommodated in the two gymnasiums. The play rooms, equipped for special lines, can be used for two more and there will still be seven rooms left for the remaining 7 divisions engaged in different activities. If we made the portable into a shop we should have one room "to the good" with all divisions reduced.

Again let it be explicitly noted that such a rearrangement means a complete reconsideration of the course of study. Furthermore the immediate financial result would be increased cost. Besides the expense of making needed changes in equipment, the reduction in the number of pupils per teacher would increase the required number of teachers and hence the per capita teaching cost. The ultimate cost

which the city must sometime face if it makes the needed reduction in average enrollment. But immediate expenditure to secure subsequent economy of operation is more than a question of building adjustment. It widens into a problem of school policy. This, or any similar plan, needs to be tested by local experiment, before being taken wholesale in a large school system. By that means its advantages can be tested and a basis of local costs ascertained.

The facts discussed earlier in this report led to the conclusion stated on page 193; the Board of Education should undertake at once an enlarged program of building "unless ways can be found to increase accommodations for enrollment in present buildings." The later discussion, we think, makes clear that there is practically no margin of room for new enrollment in the present buildings and further that readjustments there, even if (as the writer believes) desirable, must be tested in the light of modifications in the curriculum and of added teaching cost. Hence the only way to reduce the number of portable buildings and to provide for increased registration is to erect new buildings.

These accommodations can be of the regular type of permanent school buildings for approximately ten or twelve hundred pupils or there can be an increase in the number of gymnasiums and shops and other special rooms which will relieve the pressure upon the regular rooms. In that case an extensive readjustment of the course of study would be required and a readjustment of the programs of the schools would be demanded. The probabilities are that the school system of St. Louis is not willing to undertake at once the radical changes in the course of study contemplated in the extreme reorganization thus pointed out as possible. The provision of new buildings at the more crowded portable centers and the adoption of a building program for future development is, then, the first recommendation of this report.

Second, considerable can be saved in future building cost by reducing the size of the rooms, 24 by 32 feet or even 22 by 31 feet, two standards now used, will accommodate 40 pupils. If class membership is thus cut down, it should be remembered that teaching cost is bound to increase. Building cost per pupil can, however, be held down and better accommodations will thus be provided for instruction.

Third, playgrounds could be made a greater school asset. The writer believes they should be under educational direction after school as well as during sessions. In connection with the platoon plan they could be made doubly available at slight cost. A few years ago St. Louis became stirred on the matter of playground; a large investment for the time was made in sites and there are now 21 municipal playgrounds open during the summer, 3 only being carried on throughout the year. The school playgrounds, as at Gary, could be made a help within and after schools hours. But they should be regulated by the educational and not by the building department. This means again an enlargement and modification of the course of study.

Fourth, future buildings should be planned on a more flexible scheme. The grade course of study is not the fixed arrangement that it used to be. Still further modification is likely to come. Buildings like the Franklin, with several small rooms, with shops and gymnasiums, are more flexible than those having only the larger room units. By co-ordinating subject—program and special accommodation, buildings of this type would justify their expense in the extra facilities furnished. The Building Commissioner's report (October, 1915), makes the Franklin cost per pupil $204.31. This includes shops and auditorium. The per pupil cost in ordinary buildings from 1905 to 1915 ranges from $130 to $185. Clearly a plan that would use these extra rooms all the time would increase the enrollment

capacity and decrease the cost per pupil. Yet one must repeat here that numbers now assigned to classrooms ought to be lessened even at the price of increasing costs in present buildings. (This recommendation reverses the balance of expense as contrasted with the earlier paragraphs and faces the problem of a more expensive plant in order to save in other ways.)

Fifth, buildings of the Franklin type would not only be of advantage for the lower grades but would be easily adjusted to junior high school use in case that plan should be later undertaken. The course of study is still uncertain but the tendency is to more differentiation than is yet manifest in St. Louis. This means the increase of smaller class units in certain special subjects. It is therefore wise to adjust building plans to these evident tendencies. But there should be a very definite recognition of the fact that the capacity of a building and the course of study which can be administered in a school are very intimately related, and these are in turn related to the pupil population and the density of the homes in the section of the city where the school is situated. Changes productive of economy are doubtless possible; they may affect the course of study, they may modify the types of buildings, but economies themselves must be tested for educational results. And the outstanding factors in determining the use of elementary classrooms will continue to be first the maximum limit of numbers for each classroom for results satisfactory educationally and second, the adaptation of rooms to the course of study determined upon.

CHAPTER VII

CHILD ACCOUNTING AND ATTENDANCE

By H. C. Morrison

The essential purpose of the public school system is education of all of the children of the community. No matter where these children are, no matter what their physical or social conditions, no matter whether their parents select the public or the private schools as the vehicle of their education, they are still all the children of the community and of the state, and the public education office is interested in accounting for them. Under the laws of Missouri all children between the ages of eight and fourteen residing in the city of St. Louis, with negligible exceptions, must be in school somewhere. They may be in school as early as the age of five. Under certain conditions they must be in school as late as the age of sixteen, and increasing numbers are continuing their education beyond the age of sixteen.

All this means that the undertaking of primary importance is to count the children, being constantly informed of the extent of the undertaking and of the varying load which ought to be upon the school system. Hence, the work of the school system essentially begins with the task of accurate child accounting.

A. Child Accounting

The whole problem of child accounting rests, in the first instance, upon the enumeration or census of school children.

St. Louis has a child enumeration made once in five years in the month of May and intended primarily for the purpose of securing data upon the basis of which state funds originating in taxes upon foreign insurance companies are apportioned to the city for the purchase of textbooks. The last such enumeration was made in 1914. By successive resolutions of the Board of Education the data obtained in this enumeration are continued for four years as the basis of the apportionment for which the enumeration is made.

A partial census is made annually during the summer vacation by the Attendance Division. No attempt is made to make this a complete enumeration. It reaches only the congested section and is designed chiefly to locate new arrivals, especially those of immigrant children.

Quinquennial Enumeration—Census of 1914

The data obtained by this census included the total number of persons six years of age and over, and under twenty years of age, resident within the city of St. Louis. The enumeration is analyzed so as to show the total number of white and the total number of colored persons, each of which is further divided into males and females. The total number of deaf and dumb and blind, subdivided as white and colored, males and females, is also found. Incidentally, in the enumeration of 1914 the number of children unable to attend school on account of their crippled condition was found. The total number of all classes thus enumerated amounted to 159,285. One hundred thirty-seven deaf and dumb persons, within the ages specified, and 115 blind were found.

There were also found 191 crippled children and one girl seventeen years of age, deaf, dumb and blind.

The enumeration was made under the direction of the Secretary and Treasurer, and a new method was followed. Prior to 1914 the enumeration had been made by contract with private parties. This year an enumerating force in the school system itself was organized. Volunteer enumerators from within the teaching corps were called; 804 such teachers responded. The enumeration in each school district was made under the direction of the principal of that district, the whole being completed in two weeks. The cost was $6,370.32. On the basis of the data thus collected there was received the sum of $56,027.81.

The method used in this enumeration is, in general, good. It utilizes enumerators who understand the purpose of the census and who are in sympathy with the same; and perhaps, best of all, it is an excellent method of putting teachers in more vital relations with the local communities which they serve. The returns show a surprising harmony with the expectation computed by the present writer.

There would seem to be no reason to suppose that it would not be entirely practicable to secure the additional data needed to give a complete individual accounting of each child, including such items as date and place of birth, parentage, names of parents, school history, and such other physical, educational, and sociological data as may be needed. Of course, a census taken in the month of May is of small value for school purposes. To be of maximum value in child accounting a census should be made as late as possible prior to the opening of the school year. Such a census made in the manner described and at the time suggested should give the needed basis of an adequate system of child accounting. It would make unnecessary the partial census made by the Attendance Division during the summer months. It should be made annually.

The partial census made by the Attendance Division during the summer vacation, while it is incomplete and inade-

quate as to data, is still useful for the purposes of the Division, and it contributes very materially to the efficiency of that office. It should not be necessary.

Number of Children Compared With Enrollment Statistics and Federal Census

For this purpose we have, in the first place, the census of 1914, and, second, estimates as to the probable number in 1914, derived from a study of the Federal census figures of 1910 and 1900.

The census of 1914 was made in the month of May. The federal census of 1910 gives figures as of April 15. The age distribution in 1910 shows important anomalies. The data are presented in the following table:

Age Distribution of St. Louis Children in 1910 and 1900

Age	1910	1900
1	11,224	10,768
2	12,457	11,420
3	12,637	11,463
4	11,613	11,696
5	10,978	11,903
6	11,191	12,035
7	10,883	11,457
8	10,795	11,781
9	10,820	11,451
10	10,983	11,660
11	10,368	10,893
12	11,543	11,052
13	11,188	10,699
14	12,134	10,670
15	11,687	10,640
16	13,266	10,912
17	12,917	10,714
18	14,395	11,122
19	14,145	10,849

A careful study of the table shows that for the first three ages in 1910 the number of children was larger at each age than for the corresponding value for 1900. For the next eight years the number at each age was smaller in 1910, while for each of the remaining ages it was larger.

In a growing industrial city we expect to find more young children than older children and a somewhat more rapid increase among the younger children. In such a city the industrial demands require an immigration of young people or people in early middle life. This means that they bring young children with them and produce young children after their arrival. A study of the conditions in this respect in St. Louis compared with those of other cities of its class is presented in the following table:

NUMBER OF CHILDREN 1 TO 3 YEARS INCLUSIVE

	1910	1900	Per cent Increase	Per cent Decrease
Baltimore . . .	31,169	29,456	6	.....
Boston	38,473	33,969	19	.....
Cleveland . . .	37,230	24,888	50	.....
Pittsburgh. . .	34,329	29,915	15	.....
St. Louis	36,048	33,651	7	.....

NUMBER OF CHILDREN 4 TO 11 YEARS INCLUSIVE

	1910	1900	Per cent Increase	Per cent Decrease
Baltimore . . .	78,981	81,081	.....	3
Boston	90,305	77,310	17	.....
Cleveland . . .	88,222	65,630	22	.....
Pittsburgh. . .	77,849	74,827	4	.....
St. Louis	87,631	92,876	.....	6

NUMBER OF CHILDREN 12 TO 19 YEARS INCLUSIVE

	1910	1900	Per cent Increase	Per cent Decrease
Baltimore . . .	83,974	78,948	6	.....
Boston	89,338	67,121	33	.....
Cleveland. . . .	81,110	57,454	41	.....
Pittsburgh. . .	79,030	67,054	18	.....
St. Louis	101,275	86,658	17	.....

Apparently at about 1905 to 1908 something caused a change in the trend in St. Louis. Very likely the accelerated industrial activity which occurred at about that time tended to restore the normal balance of young families so that we find a different state of affairs in the case of children three years of age and younger in 1910 than would have been the case had the census been taken three years earlier.

In view of the foregoing it will evidently not do to bunch the children of ages 6 to 19 together and predict the number in 1914 from a study of the total increase between 1900 and 1910. Taking the ages separately and correcting them for the epoch of 1914 by applying the average tendency found for each between 1900 and 1910 and moving the result forward four years from 1910 to 1914, since children who were two years of age in 1910 would be six years of age in 1914 and so on, we derive the following approximate probable table of ages for April, 1914:

AGE DISTRIBUTION, 1914

Age	Number of Children	Age	Number of Children
6	12,872	14	10,577
7	13,107	15	10,158
8	11,580	16	11,739
9	10,608	17	11,384
10	10,853	18	12,719
11	10,653	19	12,104
12	10,401		
13	10,568	Total	159,323

The results of the census of 1914, May, give 159,285. The actual returns are surprisingly close to the expectation.

The census of 1910 found 3,154 persons less than 20 years of age in the city of St. Louis who were married, widowed, or divorced, chiefly whites.

There were probably 11,406 children in St. Louis in 1914 who were five years of age or 160,729 over five and under twenty.

The age tables for the public schools, page 364 of the annual report, show that there were 97,250 pupils of those ages in the public schools during the school year 1914-15, the ages being taken as of September first.

Between the ages of five and sixteen, the end of all compulsory schooling, there were enrolled in the public schools 92,599. There were probably 122,783 children of these ages in the city.

Between the ages of 8 and 14, the strictly compulsory education years, there were enrolled 54,450, and we find that there must have been in the city of these ages, 64,663.

It is regrettable that there are no figures obtainable to show exactly how many children there are in the city enrolled in parochial and other private schools and otherwise complying with the compulsory education laws. It is easy to believe that there are at least 10,213, the difference between the figures last quoted. The estimate furnished the survey is 14,000 which we believe to be much too high.

From all the foregoing it is very clear that the number of children of compulsory school age who are not in school is negligible.

Children Not at School and Not at Work

The statute requires that all children between the ages of fourteen and sixteen who are not at work shall be in school. The statutory provisions for factory inspection are so inadequate as practically to negative an otherwise good child

labor law. Only seven inspectors are provided for all factory inspection, including child labor, and the inspection reaches only cities of more than 10,000. The force is entirely inadequate to cope properly with even cities of this class, and inspection of factories for child labor purposes presents problems which are widely different from those found in inspecting for occupational diseases, hours of labor, protection to machinery, etc. The reports of the Chief Factory Inspector show that he is fully conscious of the principle. Of systematic inspection of gainful occupations in which children are permitted to be employed there is practically none in the city.

St. Louis ought to know by a definite accounting system how many children there are in the city between the ages of fourteen and sixteen who are neither in school nor at work. The survey can only infer from such data as it can secure.

During the school year 1914-15 there were outstanding 11,302 employment certificates issued to children between the ages of 14 and 16. There were found employed by factory inspection 4,665. (See page 423 of annual report.) On the face of the returns it would, therefore, seem that there were over 6,000 children of these ages neither at work nor at school. No such conclusion is warranted by the results of factory inspection for the reason that inspection does not reach the bulk of the types of establishments in which children are employed.

There were approximately 12,600 children enrolled in the schools during the year who were of employment age during the year, exclusive of those who are known to have received employment certificates. The probable number of children in the city who reached employment age during the year is considerably in excess of 25,000, probably as much as 27,500. We have no means of knowing how many children of these ages were in institutions other than public schools, but the number cannot have been great. If all the children who held employ-

ment certificates were using them, then the number neither at school nor at work cannot have been great. Adequate factory and mercantile inspection alone would tell the story. As it is, nobody knows.

The school department cannot tell from month to month just how many children are neither at work nor at school unless it knows how many children are at work. The much needed cumulative pupil record card would give the data for the other side of the ledger.

Lack of Connection With Parochial and Private Schools and Other Agencies

It is made the duty of "every parent, guardian, or other person in any city of the State of Missouri of 500,000 inhabitants or over, having charge, control, or custody of a child between the ages of eight and fourteen years, to cause such child to attend some day school, public, private, parochial, or parish." The Board has no administrative relation to such private schools, except that it is the duty of the Attendance Division to see that children enrolled in such schools regularly attend. The Attendance Division must secure its information about these children from two sources: First, the observations of Attendance Officers in their districts, and second, co-operation by the heads of such schools in sending non-attendance notices to the Division of Attendance. Such co-operation ranges, as might be expected, from complete co-operation to pronounced laxity in following up children. The Board of Education has no constant information, as it should have, as to the number of children enrolled in these institutions, nor is there any systematic method of keeping these schools in touch with the Attendance Division under legal sanction which can be enforced.

Two results are at once noticeable. First, nobody really knows how many children are absentees, and second, since there are no data available at any one time as to enrollment,

it is always impossible to check up and completely account for the children of school age in the city.

A tabulation of the information contained in the weekly reports of the Attendance Officers for the school year 1914-15 shows the following distribution of the origin of information leading to the cases handled in that year by the Attendance Division.

Public Schools	50,044
Private and Parochial	4,170
Other Sources	9,392
Total	63,606

"Other Sources" sometimes includes information reaching the Division from schools otherwise than by way of the regular card notices. It is very evident that the number of cases reported by private and parochial schools is nothing like what it should be. We have no means of ascertaining the relative numbers of children of compulsory school age in the two classes of schools. Probably not far from one-sixth of the children of these ages are in schools other than public. We should, therefore, expect to receive at least 10,000 attendance notices from these schools if we receive 50,000 from the public schools.

Insufficiency of Cumulative Pupil Record

The public school system has no complete continuous pupil record in universal use. Annual record cards have been in use, and recently a suitable cumulative record card has been prepared. This cumulative record is not, however, in uniform use throughout all the schools of the city.

Next to an adequate annual enumeration, perhaps the cumulative pupil record card is the most important feature in the process of efficient child accounting. Such a cumulative record properly administered would give at once and at any time all essential data as to numbers and classifications of school children. If extended and applied to all agencies enrolling

children of school age for school or other purposes, it would make it possible for the Secretary and Treasurer's office to reach with very little additional investigation the needed data for transmission to the State Education and Auditor's offices for award of the textbook money. It may be pointed out in this connection that if the data for these purposes were kept up from year to year and the correct figures reported annually instead of once in five years, there might be received from the state on the textbook account substantially more than is now the case.

Enrollment Methods

The methods used in enrolling and accounting for children within the several schools are now very good. Children of school age are promptly registered upon their admission to school and are not dropped from the rolls except upon notice from the Attendance Division that they should be so dropped; that is to say, every child is assumed to be a member of the school until there is some legal reason why he should not be so considered. If he is absent, he is marked absent. This represents a recent step in advance by the administration and, it is needless to say, it is as it should be.

At the time of writing, however, there is no single numerical expression obtained which completely accounts for *regularity of attendance.* Reliance has been placed upon data such as those exhibited on page 362 of the last annual report. Here we find figures for those attending less than 25 days; from 25 to 50 days, and so on up to 200 days. Such data have no exact relation to *regularity of attendance* though regularity, of course, is a factor. Clearly the great majority of children enrolled for brief periods are either kindergarten children who did not enter until late in the year, or children below the compulsory age who were enrolled for only a part of the year, or children above the compulsory school age who left during the year, or children entering during the year from other school systems. What is meant by regularity of

attendance is the ratio of a child's actual days' attendance to the number of days he was carried on the enrollment. A child, for instance, may be a member of the school for 100 days; if he attends 95 of them his regularity is 95 per cent. The distribution referred to above is common, but it no longer has any administrative meaning. It is probably a survival from the period prior to the enactment of compulsory education laws when it did have a meaning.

Data secured by the administration during the past school year enable us to compute very readily a close approximation to an accurate single numerical expression for regularity of attendance. This appears to be 90 per cent which in the opinion of the present writer, considering the size of the city and the fidelity to actual facts with which the data have been secured, is creditable though it can probably be increased a few points without undue pressure upon the children. With its Hygiene and Attendance Departments, its Psycho-Educational Clinic and special schools, the system has the necessary machinery for securing an optimum regularity.

The only absolutely precise method of computing an expression for regularity of attendance is to add aggregate days' attendance to aggregate days' absence and divide aggregate days' attendance by the result.

As already suggested, we obtain in this way a single expression for regularity of attendance. If it is desired to make distributions showing how much of this regularity is creditable to individual schools and to groups, classes, and ages of pupils, and how much is chargeable to few pupils, of course such analysis can be carried out indefinitely. In the process of administration, as it becomes desirable to locate and account for large items of absence, such studies will no doubt frequently be made.

Progress Through School

The third essential element in any adequate scheme of child accounting is an accurate accounting showing the num-

ber and per cent of children promoted from year to year, the number of repeaters, the number of retarded children in the schools, and a suitable distribution showing the time required by different classes of children to complete the work of a given year or series of years.

We need to know, in substance, first, how great a load the system ought to be carrying, second, the number of children it actually is carrying, and third, the extent to which the system is being loaded up with children whom it ought not to be carrying.

A study of actual retardation is found elsewhere in the survey report, and the revelation seems to be that there is more than is known to the administration. Suffice it to say at this point that the records nowhere disclose the actual state of affairs.

It is noteworthy that there has been a large percentage of increase in the enrollment in the upper grades as compared with the lower, and the inference is drawn that this reveals the fact that pupils are moving on into the upper grades and high schools in an ever increasing ratio. Such a movement is apparent throughout the United States, and is no doubt true of St. Louis, but we have no data at hand from which we can measure the extent of the movement segregated from other factors. The study of comparative enrollment in the successive grades never gives an adequate value for the movement of pupils through the grades. In St. Louis it is especially unreliable by reason of the peculiarity of age distribution before noted. One reason why there are more children in the upper grades and the high schools is because there are considerably more children of upper grade and high school age in the city.

Stationary Character of Enrollment

It appears that, while the total enrollment of the school system is increasing, still the bulk of this increase is in the upper grades and the high schools after the end of the com-

pulsory education period. The enrollment of children between the ages of six and fourteen appears to be substantially stationary. The following table compiled from the last five annual reports reveals the situation.

TABLE SHOWING CHILDREN OF AGES INDICATED, ENROLLED FROM 1910-11 TO 1914-15

Age	Sept. 1 1914	Sept. 1 1913	Sept. 1 1912	Sept. 1 1911	Sept. 1 1910
6	10,061	9,504	13,362	11,751	11,959
7	9,390	9,875	9,138	9,609	9,582
8	9,742	9,117	9,357	9,186	9,261
9	8,989	9,562	9,083	8,918	8,900
10	9,244	9,222	8,790	8,499	9,364
11	8,986	8,818	8,764	9,114	8,315
12	8,809	9,035	9,387	8,651	8,574
13	8,680	9,013	8,310	8,555	8,916
Total	73,901	74,146	77,191	74,283	74,871

The ages given are reduced to September 1st of each year. The reports for 1914-15, 1913-14 include the ages four and five, but this is not the case for the three preceding years. The law was so changed as to admit the children at the age of five in 1913-14. For purposes of comparison, data were secured from the reports down to the age of six, but no lower. For the three earlier reports covered in the table no data are given below the age of six.

The situation is easy to understand in the light of our analysis of the age distribution of the school population. The reason why the enrollment in the elementary schools is not increasing is found in the fact that the number of children in the city of the ages involved is for the present practically stationary.

There will, however, probably be a slow increase for the next four years and after that a somewhat more rapid increase. It should be remembered, however, that the birthrate is low. On the other hand, better and more extensive child protective

agencies would increase the number of children. Compare Cleveland in this respect.

What Might Be Done

1. Make an enumeration at least once a year, using the same methods as for the 1914 enumeration, at a time as close as possible to the beginning of the school year, securing data on all essential physical, educational, and social facts.

2. Establish a cumulative record covering all children in the public schools. Secure the needed legislation to make this cumulative record apply to all children of school age in the city, whether in public or private schools or enrolled in custodial agencies.

3. Establish an accurate system of keeping track of the movement of pupils through the school system, making it possible to know at any time the number, location, and the type of children retarded or accelerated and of repeaters.

4. Place in charge of the whole system of child accounting an officer properly trained and otherwise fitted for the work.

5. Secure legislation providing for more effective child labor inspection in the city. Such inspection can be best done by the Attendance Division of the school system.

B. Attendance Division

The personnel of the Attendance Division is a chief attendance officer and seventeen assistant attendance officers. Of the assistant attendance officers one is assigned to office work including the issuance of employment certificates and four are assigned to the following special duties: delinquent girls, neglected children, emergency cases, idlers, street trades, and night work. This leaves twelve assistant attendance officers assigned to regular subdivisions of the city, the several subdivisions including from two school districts to fourteen. One of the regular district officers is also available for special immigrant cases.

Appointments to the Division are made by the Board of Education upon recommendation of the Superintendent of Instruction from an eligible list. The eligible list is made up by examination, both oral and written, of applicants. The members of the Division are very generally persons of adequate education, commonly persons who had had prior to entering the department more or less extended experience in school work or in industrial or social welfare work similar to the work they would be called upon to perform as assistant attendance officers.

The general conception under which the work of the Division is carried on is excellent. It is conceived to be quite as much the function of the Division to eliminate causes of irregular attendance, non-attendance and truancy, as to place the children in school. Further, the chief attendance officer conceives it to be his duty to study the problem constantly in a scientific spirit with the ultimate purpose in mind of discovering and classifying the underlying causes which tend to interfere with the attendance of children at school. A series of reports has been published as part of the annual report of the Board of Education which contain much valuable socio-

logical material and data for which there is a great need in the routine work of the different child labor offices of the country especially.

The Division works in cordial co-operation with the Juvenile Court and probation officers, with the police department and the board of children's guardians, and with other charitable and correctional agencies in the city.

So far as the ordinary routine field work of the force is concerned, the office is well organized, with appropriate rules, assignments, functional division of labor, and personal touch with the different schools and other agencies with which the Division comes in contact. It is alert with numerous devices for the improvement of its service.

The Division secures its essential routine information in a variety of ways but chiefly the following:

1. A partial census is made during the summer vacation, especially of the congested districts and those sections of the city which in the judgment of the chief attendance officer are most likely to show considerable numbers of arrivals and children otherwise due to enter the schools in September. This information is furnished to the several principals.

2. Soon after the opening of the school year in September an information card, so called, is furnished the office for each child in each school. This card shows the street address, name of child, date of birth, name of parent or guardian, occupation of latter, and business address. It also contains the names of other children in the family between the ages of five and sixteen. It further contains information with reference to other families having children known to the child for whom the information card is made out. The cards are arranged by streets in such a manner as to make probable gaps noticeable, and when filed they form a good check upon various other items of information which the office occasionally secures during the year.

3. Notices of absence. Each principal daily sends to the office notices of absence of pupils whom he wishes looked up

with the requisite data. On the reverse side of this card is a space for the report of the officer.

4. Supplementary reports from officers who in the course of their duties find children upon the streets.

The assistant attendance officers are required to keep in telephonic communication with the central office during the day, and the emergency officer is required to call up the office at frequent intervals during the day in order to keep in touch with developments. During the past year 1914-15 the office has handled an average of 389 calls per day for each of the 200 days of the school year.

On the side of field work by itself, there is very little, if any, ground for criticism of the office.

Employment Certificates

Missouri has a good child labor act except for inadequate enforcement provisions. The child labor problem is much more dependent upon methods of enforcement than upon excellence of other statutory provisions. In the enforcement of child labor acts there are two essential parts: (1) Adequate control of employment certificates and (2) adequate factory inspection. This report is concerned only with the first of the two factors in the process. Comment has already been made upon inspection.

The method of issuing employment certificates is excellent in every detail. The essential facts are faithfully and accurately found and checked up and whenever there is any doubt the benefit of the doubt is given to the welfare of the child rather than to his employment. For instance, with the children of immigrants it is always very difficult to secure proper proof of age. The statutory provision as to proof of age leaves it within the discretion of the certificating officer to accept the affidavit of parents or guardians in place of documentary proof of age. Prevalence of the European war has made it especially difficult to secure such documentary

evidence. The temptation is strong upon any certificating officer under the circumstances to accept the affidavit and the affiant rarely leans in the direction of the real welfare of the child. And yet, during the past year, out of approximately 4,000 employment certificates issued the number backed by affidavit rather than by documentary proof was so small as to be negligible.

It is made optional with the attendance officer whether or not he shall require a physical condition certificate based upon medical examination. In case of doubt he is expected to require such a certificate.

From the report of the supervisor of the division of hygiene, page 253 of the annual report, we find that 227 such cases were referred to that office for examination but in only four instances was it found necessary to refuse a work certificate. This is in conformity with experience in states in which the law requires physical examination for every applicant. It indicates that the attendance division is taking no chances.

Juvenile Court Work

We find it suggested in the report of the chief probation officer, February, 1914, that school cases should be handled by the school department and that resort should be had to the Juvenile Court only in desperate instances. From page 5 of the same report we secure the following table. The table tells its own story.

Table Showing Source of Juvenile Court Delinquent Cases

	1909	1910	1911	1912	1913	1914-1915	1915-1916
Total	1,730	1,566	1,571	1,748	1,736	.....	.....
Police	1,260	965	996	1,322	1,547	.....	.....
Attendance Officer	254	219	178	65	47	63[1]	47[1]
Chief Probation	216	382	397	361	142	.....	.....

[1] Information secured from records of Attendance Office.

Street Trades

Five assistant attendance officers were added to the Division at the beginning of the school year 1914-15. One of the objects of this move was to exercise better supervision of street trades.

The writer knows of no other way to check up the street trades situation than by personal inspection. Different quarters of the city have been under observation for this purpose almost daily for a period of over two weeks. Such observation has not been systematic, nor has it reached every quarter of the city. So far as it has gone, such observation leads the writer to believe that the street trades in St. Louis, so far as observance of the law relating to children is concerned, are in good condition, as good as in any large city he has studied and better than some. It should be remembered that the law permits boys as young as ten to engage in street trades. It would be advantageous if all children so engaged were required to wear an appropriate badge secured in the same manner as an employment certificate.

Immigration Cases

The Federal Immigration Offices at New York, Boston, Philadelphia, and Seattle, have reported cases of alien children under 16 years of age entering the United States and destined to St. Louis. A study of the file of cases was made. The earliest entry is July 23, 1914, and the last May, 26, 1916—a period of abnormally light immigration. The following table exhibits the results.

Total number reported by immigration offices.....		81
Number accounted for and in school or definitely located elsewhere and reported back to port of entry		40
Number reported not located		18
Number concerning whom file gives no record.....		9
Number incorrectly reported complete		10
Number incomplete reports from immigration office		4
		81
Number of above bonded.....	3	
Number properly reported	3	

There is no case file. Material is all filed loosely in a drawer by itself and that is all. This probably accounts in part for 37 defective cases.

Records

When we turn to this very essential side of the administration of the office the situation is not so satisfactory. There is no proper case record, and such records as there are are not so well kept up as they might be. The chief attendance officer and the members of the staff carry in their minds a prodigious amount of information regarding details of the work throughout the city, and it would be a pity to replace this type of contact with the actual work by red tape. Nevertheless, an adequate system of records and personal touch with the work are not mutually incompatible. In any kind of modern social work complete case records are an indispensable foundation if the work is to be systematic and scientific. This is not to say that good work cannot be done without such devices but it is to say that the work cannot in that case be complete or, on the other hand, be most economically and efficiently administered.

If a case is worth looking up at all, it is worth being made the subject of a complete card record. This record should show substantially the facts which the information blank now in use does show and on the other hand should show a concise and complete record of the disposal of the case. If, as is frequently true, the case is transferred from an ordinary irregular attendance job to special assignment under the head of truancy, delinquent or predelinquent child, neglected child, etc., the original card should show the fact and separate case files should be kept for each of these subdivisions as is now the case with delinquent and neglected children.

There should be a separate file for cases pending and cases complete, and no card should be transferred from the first to the second until it is complete. A competent officer at headquarters should be in charge of the case of files, and it

should be his or her duty to keep the pending case file just as nearly empty as circumstances will permit.

The file of information blanks at present kept could very readily be transformed into a case file if attention were given to the following principles:

1. It should be insisted that the cards be kept up. At present they are not kept up as they should be. In some cases the attendance officer's report on disposal of the case is left blank altogether. In these cases the story can usually be found in the officer's file of daily reports, but only by search and then in fragmentary form.

2. The report of the attendance officer on the reverse of the information blank is very frequently a note in pencil which conveys no information to anybody other than the author. Again, in a very large proportion of the cases the entries on the reverse of the blank are merely single brief notes such as "Called at address given," and contain no information as to the disposal of the case. Finally, a very considerable proportion of all the cases followed up do not originate in information blanks at all. They are found by the officers on the regular beats. These cases, of course, should be treated as a matter of record precisely the same as cases reported by the principals.

Further, under present conditions, cases are not checked up. The officer, for instance, secures a promise to send the child to school, and that is the end of the case so far as any record is concerned. Reliance is then placed upon the expectation that if the child does not come back to school the principal will notify the attendance office.

Under these conditions it is probable that a very considerable number of cases annually slip through the meshes, and indeed, there is some reason to think that this is actually the case. The result is irregular attendance, but not necessarily non-attendance.

Annual Report

The following is an excerpt from the annual report of the Attendance Division:

TABLE I

Total Number of Cases Investigated, School Year 1915-16

Cases reported to the attendance officers for investigation..	77,859

TABLE II

Results of Investigation

Number of children absent for good cause	44,912
Cases of truancy investigated	2,257
Disorderly juvenile offenders investigated	536
Cases of irregular attendance looked after by officers	24,431
Cases of non-attendance investigated	2,922
Found working in stores, offices or factories (under age)	25
Cases not found at address reported	2,776
Total	77,859

TABLE III

Notices Served and Prosecutions in the Courts

Warning notices of proposed prosecutions served on parents	1,805
Parents cited before prosecuting attorney	225
Persons prosecuted for violating school law	3
Persons over 16 years prosecuted for other reasons	1
Children brought to Juvenile Court	47
Number of employment certificates issued	*3,786
Number of children taken to school	406
Number of children taken to House of Detention	8
Number of children taken to hospital and institutions	15

*Figures for 1914-15.

One is at once struck by the fact that 57 per cent of all the cases investigated were found to be due to absences for good cause. It would seem evident that the room teacher or the principal, or both, ought to be in sufficiently close touch with the home life of children to be able to identify a large proportion of these cases at the outset as absences for cause and thus save the attendance office perhaps one-third of its work. No doubt an information blank should be sent to the central office in all cases about which the teacher is in doubt, but these certainly should not amount to more than one-half of all the notices sent in.

The annual report does not tell a complete story. We are informed that the officers investigated 77,859 cases. We are further informed that 44,912 of these cases have been found to be due to absence for good cause, in most cases presumably requiring no further investigation and therefore closed cases.

It is then recorded that 2,257 cases of truancy were investigated. The statement should be that 2,257 cases which turned out to be truancy were investigated. We are not, however, told what disposition was made of these cases. The number 2,257 should be balanced by a distribution showing such items as commitments to truant schools, commitments to industrial school, cases incomplete, etc. Five hundred thirty-six of the total number of cases investigated turned out to be disorderly juvenile offenders, and again we are not informed what disposition was made of the cases. Twenty-four thousand four hundred thirty cases of irregular attendance are noted as having been "looked after by officers." We are not informed what happened to the irregular attendants. The office needs to know for its own purposes and readers of the report need to know how many of these cases were cured and how many are just as bad as ever.

A similar statement can be made with reference to the cases of non-attendance investigated. Only 25 cases were found working in stores, offices, or factories (under age). We are curious to know how many convictions were secured; in

a word, what happened. Two thousand seven hundred seventy-six cases were not found at address reported. The chief attendance officer gives it as his opinion that 80 per cent of these cases were permanently lost. The families or the children, or both, simply disappeared. No doubt in most cases the families left for parts unknown. Nevertheless, more than 2,000 children in a single year simply dropping out of sight of the school system is altogether too large a number. For all we know to the contrary, some of these children may be in the river or have met a similar fate. The children of a community are entitled to oversight. When a child leaves school we should find out where that child has gone, what has become of him, and be reasonably confident that he is not in distress.

Most of the items in Table III should appear as sub-items in Table II, or should have a full standing in Table II with statistics as to outcome. One exception should be noted. Table VI entitled "Cases in Juvenile Court" gives an entirely adequate analysis of the disposition of such cases. In general, the office does not know at the end of the year definitely and in numerical terms what it has accomplished during the year.

Nineteen tables follow the first three summary tables. These are all admirable and very useful analyses of such topics as age, sex, color, grade, and retardation in cases of truancy, reasons for quitting school, influence of income in families on grades of school children receiving employment certificates, etc.

Summary of the Chapter

1. The personnel of the division is well chosen and well organized.

2. The methods of work employed in the field are excellent in conception and adequate in organization.

3. The office records are not sufficient to make economical and efficient administration possible.

4. The methods used in issuing employment certificates are proper and are well and faithfully carried out.

5. The annual report does not reveal definite and complete data in the possession of the Division bearing upon the year's work. A number of excellent and valuable sociological tables are published.

C. Related Child Welfare Work

Correctional Work With Adults

Experience shows that the largest single underlying cause of irregular attendance, non-attendance, and truancy is to be found in the relations of children with adults, either their own parents or guardians or others, because there are many ways in which the adults either positively or negatively interfere with the attendance of children at school. As parents, they may simply keep the children out of school or become negligent about sending them to school. They may be shiftless and unable to properly provide for their children. They may be depraved, and in not a few instances adults other than the children's parents may indulge in moral abuse of children. So, taken altogether, any attendance division which is doing a just work is doing a large amount of preventive work by correcting abnormal relations of children with adults. The chief attendance officer and his assistants are alive to this principle, and the Division does what it can without interfering with the police department and the chief probation officer's office. It accomplishes much.

This Division ought to have definite power to secure evidence and file information in the Juvenile Court and conduct cases there. It ought also to have definite authority in all cases in which school children are concerned to secure evidence and deal directly with the District and Circuit Attorneys' offices. It is no doubt true that this Division, as is the case with other similar divisions in other cities and in other states, comes closer to the children and is more likely to bring children's cases to light than any other party of workers in the city. It is beyond dispute that an attendance division, organized as this is, is vastly more likely to secure evidence

from children and through children than are the regular police officials. Furthermore, it is much more likely to bring such cases to light.

Truancy Cases

The truancy problem in St. Louis is being intelligently handled and in a constructive spirit. Truancy cases are in general of two types: First, a child who simply runs away from school; second, the confirmed truant. The first type of cases is very much the more numerous, and it is a type of behavior which is likely to happen in the case of almost any healthy boy and many girls, especially during the years just preceding and just succeeding the advent of adolescence. Seventy-eight per cent of all the cases in St. Louis occur between the ages of eleven and fourteen inclusive. The truant school maintained by the Board of Education is distinctly a move in the right direction. It is intelligently conceived and intelligently administered, and above all, properly placed as to the governing authority; that is to say, the Board of Education instead of an independent board.

Other Delinquents

A woman assistant attendance officer is assigned to the work of following up delinquent girls. She works sympathetically with her cases and in co-operation with the Juvenile Court, Probation Department, and various charitable and correctional institutions.

Industrial School

The Industrial School is under the control of the Board of Education and the Board of Children's Guardians, the Board of Education for supervision of the educational work within the institution and the Board of Children's Guardians for the control of matters of administration, subsistence, upkeep

of plant, etc. The Industrial School for Boys is at present in a transitional stage, occupying partly old buildings in the city and partly a new plant north of the city near the junction of the Missouri and Mississippi Rivers. The new plant is in every feature admirably calculated to serve its purpose according to the most modern standards of dealing with this class of boys. It is located on a large farm where the boys will have the largest and best opportunity for outdoor work in agriculture and in the care of animals, and in large constructional activities. There are at present three buildings on the cottage plan, each housing 26 boys, each under the care of a house father and a house mother. Substantially all the household work, as well as all the farm work, is done by the boys. They have excellent instruction in the ordinary school subjects under competent supervision. The buildings themselves are admirably calculated to serve their purpose and while substantial and homelike and attractive, are in no sense of the word extravagant.

It is the present policy of the Board of Children's Guardians to deal with delinquent girls otherwise than in institutions, at least this institution, the policy being so far as practicable to locate them in suitable homes and at the State Institution.

Defectives

Under this head we have in mind four classes, the feeble-minded, the blind, the deaf and dumb, and the crippled. We deal with this question at this point only as it is related to the whole problem of attendance. Any well organized school system must have agencies prepared to deal with these classes, not only in justice to the individuals concerned and as a protection to society, but also because they otherwise create a serious attendance problem. In the case of the feeble-minded, for instance, all grades above imbecile and sometimes even including higher imbeciles, it is still true of the country at large that they are kept in the regular schoolroom, and of

course, contribute largely both directly and indirectly to the attendance problem.

In the case of the deaf and dumb, the blind, and the crippled, the Attendance Division is involved only as it ought to ferret out all the unfortunates and see that they are placed in school somewhere or are provided with such educational opportunities as they can utilize.

The system seems to be exceptionally well organized to deal with these classes of children. In the case of the feeble-minded, a beginning has been made eminently in the right direction through the organization of the Psycho-Educational Clinic and its activities in the Special Schools for Individual Instruction. This work is under the direction of a specialist of national reputation. It may well be expected that this department will grow deliberately and certainly in the direction of the solution of the problem so far as the public school system can contribute to its solution.

It is no part of the duty of this survey to enter into the very large and extremely difficult social question of the feeble-minded. In its larger aspects, it is quite as much a problem of the adult as of the child. It has come to be well recognized, for instance, that the kernel of the matter is in the feeble-minded woman of child-bearing age. In this direction the city and the state are not different from most other communities, especially in their lack of adequate facilities for the care of custodial cases. The problem of the feeble-minded is one of our most formidable social problems, indeed, perhaps the most formidable. It is suggested that as this department of the school activities expands, it will proceed to accomplish one of the greatly needed undertakings in connection with the whole vital problem, to-wit, the identification in the schools of the indubitably feeble-minded individuals, especially morons, and the permanent registration of the same.

Closely related to the problem of the feeble-minded in the school system is the problem of border line cases and backward

children and children of normal mentality who have become out of step in their progress through the school system.

This problem is recognized by the school system and is being properly dealt with administratively through the ungraded rooms. There are 35 of these at present. The Director of the Psycho-Educational Clinic thinks that this number should be largely increased, giving an estimate of 100 to 125. The exact number needed is a question of fact to be determined by exact retardation statistics and by clinical examination of children who are slow mentally. It would not be surprising if it were found that there should be the equivalent of one such room for each of the 24 room buildings in the elementary school system.

Three classes are enrolled in these schools: First, children of active mentality who for some reason have become out of step with the school system. These children are restored to their normal position in the grades as soon as it is possible to transfer them to the regular schoolroom. Second, those who are slow mentally but not to be designated as feeble-minded. The chief need of these children is individual instruction. Third, border line cases who are in the ungraded rooms chiefly for observation.

In the activities of the Psycho-Educational Clinic clear cases of imbeciles are excluded altogether. This is, doubtless, as it should be, but some public agency should certainly register these cases and keep track of them, either in their homes or in institutions. Imbecile children left to grow up without such registration are a very serious menace to society.

It is notable that there are wide differences in the extent to which the principals appear to avail themselves of the resources of this division. In the last printed report, page 144, it appears that 32 elementary schools made no use whatever of the Clinic. This was the record for the first year of its activities. The number of cases in which the initiative was taken by the school varied for the different schools from 0 to

68. Such a wide difference cannot be justified. Doubtless some principals will tend to report too many cases, but it is hardly likely that any school can rightly get through any year without discovering some instances in which the advice of the Clinic should be sought. Studies of retardation in St. Louis schools indicate that the use of the Clinic should be much more extended.

The report of the Clinic, page 145 of the annual report, contains a table showing the disposition of cases. This table is illustrative of a type of table of which more extended use ought to be made in the annual report.

All the foregoing, if not dealt with as it is being dealt with, would be creating a set of bad attendance problems and would largely increase the work of the Division of Attendance.

The blind are cared for in the State School for the Blind. The deaf and the deaf and dumb are provided for in the Gallaudet School which is under the direction of the Board of Education. The number of deaf and dumb found in the May census of 1914 was 132. This includes both the deaf and the deaf and dumb. The corresponding enrollment for the Gallaudet School is 61. The census above referred to found 191 crippled children, and a proposal was before the Board to provide transportation for such of these children as would belong in the regular schools and could not on account of their condition reach the schools without such transportation. Nothing has so far been done.

Dependents

A large proportion here as elsewhere of all chronic attendance cases originate in dependency. Such children may be classified as destitute, and neglected, but not necessarily destitute. Within the classification of neglected children are included children who are inmates of depraved homes and those who are abused.

In such cases the Division of Attendance works in close co-operation with the various charitable organizations, notably the Provident Association, the Society of St. Vincent De Paul, and the Jewish Charitable Union. There is no public outdoor poor relief in St. Louis. There are no exact statistics available to show just what proportion of the cases are adequately relieved. There is, however, an attendance officer assigned specifically to work with this class of children. There is no organization in St. Louis, either public or private, devoted especially to the relief of abused children, ordinarily termed S. P. C. C. work, except the State Humane Society, which unites prevention of cruelty to children with prevention of cruelty to animals. Such cases are reached in the ordinary routine by the Attendance officers assigned to work with delinquent and neglected children, and by the regular police and Juvenile Court officers. This type of work has come to be recognized as needing special study and preparation, and it would be desirable to assign an attendance officer specifically to this work co-ordinate with the assignments of officers to work with delinquent girls and dependent children.

Case Files in Delinquent and Dependent Cases

A case file is kept in the Division of Attendance for work with the delinquent girls and dependent children. It is not, however, a good record. The file was carefully scrutinized and the following types of defects were noted:

1. Both pending and completed cases are filed together. Completed cases are transferred at the end of the year. This results in a considerable proportion of the cases slipping through. For instance, in the file for the year just closed are a considerable number of cases which have been pending for a whole year, the officer gathering information all along and filing the same but not recording accomplishment. Frequently the last entry will be many months old.

2. Folders which probably belong to completed cases end with such statements as "Has no clothes; will report next week." There is, of course, nothing to show that the pupil does report. Some of these cases unquestionably simply drop out of sight.

3. In a case which has a Juvenile Court record the latter is filed separately in a bunch which is simply thrown into the drawer.

4. Occasionally a case is found in which the report plunges into the midst of things without any reference to the origin of the case.

5. Cases are reported on slips of paper, blank forms used for other purposes and the like. There should be regular blank forms provided for this purpose which should have space for a record of certain data needed in every case, such as age, race, character of family, sex, mentality, physical condition, etc. Such blanks could profitably be printed on the folder itself. Altogether rather more than half of the cases filed have a decidedly incomplete record.

Duplication

In the work of child accounting and attendance there is no duplication within the school department apparent to the investigator. Duplication might easily have grown up between the work of the Attendance Division and the Hygiene Division, but this has been prevented.

On the other hand, it is suggested that there is duplication within the whole region of child welfare work within the city, and such duplication, of course, is expensive to the taxpayers.

First, it is difficult to see why two boards, the Board of Education and the Board of Children's Guardians, should be necessary to administer the Industrial School. This kind of duplication does not necessarily increase the overhead ex-

pense to any great extent, but in the long run it will have a tendency to destroy that type of centralization which makes for efficiency and responsibility and which is, on the whole, so desirable a characteristic of the administration of the school system. Boys entering the Industrial School originate in the school department; they are practically under the control of the Board of Education while in the Industrial School, and there is no feature of their career there which is not of an essentially educational type. At present the institution, at least the new part, is carried on as it should be, frankly, sincerely, and with an eye to curative influence of an educational order. In this respect it is quite different from not a few such institutions which tend inevitably and destructively to include various factory schemes in their methods of work which will be defended by no educational or child welfare authority.

Second, we find an Attendance Division in the Board of Education including a chief attendance officer and seventeen assistants. In the Probation Office, connected with the Juvenile Court, we find one chief probation officer and fifteen assistants, besides three clerical assistants and one teacher in the House of Detention. In the Board of Children's Guardians we find one executive head, four women visitors and two stenographers. In other words, here are thirty-nine different officers engaged in field work and administrative work, all of whom are covering the same ground and dealing with essentially the same problem, and yet a very important side of child welfare work is left inadequately provided for, namely child labor inspection, which is assigned to the office of Factory Inspection, a state office. All are dealing with children who are in the public schools or who ought to be in the schools, or who will eventually be in the public schools. At the same time it should be noted that the probation officers at the present time are looking after 100 to 150 cases each, which is very much in excess of a reasonable assignment. At the same time the Board of Children's Guardians has 210

children in natural homes and 140 in foster homes. These children are commonly wards of the Juvenile Court. This means a load of nearly 90 to each of the four visitors. We are informed that each of the four visitors is supposed to care for forty children. Fifty children has been found by a competent authority to be a maximum number of placed-out children to be assigned to an individual visitor. It is true that the visitors receive help from the probation officers, and it is also true that the majority of the children are placed in the natural home. Nevertheless, if a child has to be placed out at all, whether in the natural home or in the foster home under the oversight of the Board of Children's Guardians, the fact itself is good evidence that the child needs oversight and visitation by the placing-out authority.

Here is a duplication which involves expense and which must in the long run involve inefficiency. It is the belief of the present investigator that all this work and substantially all child welfare work in the city, including factory and store inspection for child labor, could profitably be centralized in the Attendance Division of the Board of Education. Such centralization would enhance and guarantee efficiency, and in the long run would be less expensive for the same grade of efficiency.

CHAPTER VIII

MEDICAL INSPECTION

By E. A. Peterson

Summary[1]

In this chapter Dr. Peterson points out the reasons why health inspection of schools and the employment of school nurses are necessary. The city health department cannot deal adequately with the school problem.

Dr. Peterson finds the department in St. Louis serving the purpose for which it was organized.

He calls, however, for a number of enlargements of the department and points out the reasons why it is important for the schools of St. Louis that these enlargements be made.

Especially clear is a comparative table which shows that more complete organizations exist in other cities of the class to which St. Louis belongs.

[1] By Chas. H. Judd, Director of the Survey.

MEDICAL INSPECTION

History

St. Louis was one of the first American cities to recognize the importance of medical inspection. The records of the Board of Education show that as early as 1891 it co-operated with Dr. Porter in a study of the growth and development of school children which attracted the attention of the entire country.

In 1898 the Committee on Instruction, acting on a communication from an interested group in the city, recommended to the Board of Education a resolution asking the Board of Health to provide medical inspection for school children. The Board adopted the recommendation. No action being taken by the municipal assembly to carry out this request, the St. Louis (Alumni) Medical Society gained permission to carry on the medical inspection of school children in order to demonstrate its efficiency. A report was rendered in 1899.

Following this report, in 1900 the Superintendent signified his intention of recommending to the Board of Education the appointment of a medical officer with a rank of perhaps assistant superintendent to have general supervision over the hygienic conditions of the schools. For the next few years, however, no definite action was taken because of a difference of opinion on the part of the Board of Education and the Board of Health as to which should pay for the health inspection and because the Board of Health could not find funds for this purpose.

The Board of Education finally decided that the work was of so much importance and related itself so closely to the school that it ought to assume full responsibility. A De-

partment of Hygiene was accordingly organized and began its work in the fall of 1909 with one supervisor and five inspectors working only in the congested districts. The growth of the Department is shown in Table I. It was not until 1914-15 that the entire school population was brought under the influence of the department. This slow growth was due to the fact that money was thought to be more needed in other lines of work.

This brief historical sketch suggests two questions. First, why is a modern school system in need of a hygiene department; and second, why should not the whole matter of health in the schools be left to the city health department?

The answer to the first question can be briefly stated. City life has changed absolutely the conditions surrounding children and has made necessary special provisions if they are not to suffer seriously from these new conditions. Formerly homes were far apart and children lived in the open air. Today in urban communities children are kept together indoors. Furthermore, the demands of civilization have increased the burden of training which every child must carry. He cannot grow up in illiteracy. He must go to school; the law compels him to go. All children, the strong and the weak, the bright and the dull, the rich and the poor, are gathered together under one roof. In one seat is the child from a careful home where the hygienic practices help to keep disease out; in the next seat is the child from the tenement where hygienic practices trail far in the rear of general knowledge along this line and where, consequently, disease is a constant dweller.

Civilization has imposed an enormous strain on human nature when it demands that millions of children, just at the age when every fibre of their being was crying out for activity, sunlight, and fresh air, shall be placed indoors and in seats for the five best hours of the day. This is one of the greatest physical burdens which has ever been imposed on the young of any animal. This situation is the worse because

TABLE I

SHOWING GROWTH OF HYGIENE DEPARTMENT IN NUMBERS OF WORKERS AND WORK DONE

	1909-1910	1910-1911	1911-1912	1912-1913	1913-1914	1914-1915	1915-1916
Supervisors	1	1	1	1	1	1	1
Inspectors (Doctors)	5	5	5	5	6	11	11
Nurses	0	6	6	6	6	20	22
Children examined	15,500	16,740	19,470	21,657	22,074	73,780	..
Children found defective	9,521	12,428	16,201	15,290	15,519	35,795	..
Number treated or cured	2,282	2,953	2,877	3,861	3,348	11,057	..
Number treated by family doctor	700	1,114	1,172	1,379	1,329	5,829	..
Number treated at clinics	554	1,084	893	1,599	1,191	2,678	..
Contagious diseases found and excluded	1,320	1,092	1,273	906	962	3,016	..
Number of children persuaded to get glasses	542	513	489	482	479	1,495	..
Number of children persuaded to have operations	156	441	201	309	227	1,055	..

the child is the most highly organized animal (consequently the most susceptible) in the world.

Medical inspection has come to help meet the strain incident to such a mode of life, to make the urban environment as wholesome as possible, and to start every child in a way of living which will be most conducive to an "efficient" life. Medical inspection is not a narrow system devised to deal with sick children; it is a broad educational department dealing with the new conditions in which city children must live.

This general statement of the functions of the health department does not define clearly, however, the relations of the school department to the city health department.

The conditions leading to the development of a city health department are in the main very much like those which have been sketched in explaining the need of medical inspection of children.

When under the simple conditions of living which existed before great cities grew up John Doe's horse died, the carcass was dragged off to the forest where it "returned again unto dust" without annoyance or injury to anyone or it was burned in the lower pasture. Under urban conditions it is very difficult to solve problems such as this; in fact it proved so difficult of solution in so many cases that the people placed the responsibility for solving this and similar problems in the hands of a special committee which finally became the Board of Health.

The object of this organization has been to see that conditions which tend to make a community unhealthy are done away with. The Board of Health is given police power so that it can immediately handle a situation where some one objects to a hygienic procedure and where the community's wellbeing is imperiled.

One of the important functions of this policing board is to control contagious disease. The problem of checking contagion is an acute problem in the schools. The facts show

that in the early years of a child's school life he has more of the diseases of childhood than at any other period, especially more than he had when he was at home during the period immediately preceding school. Furthermore, as soon as school breaks up for the long vacation, contagion subsides. The bringing together of large groups of children in schools is one of the most prolific methods of spreading contagion.

To protect children and their homes against contagion is therefore a duty of the schools. Since, as shown in the historical sketch given above, the City Board of Health could not make this inspection as thorough as it should be, the School Board was forced to take over this work. In any case a health inspection of the schools is essential.

But the school health service soon developed far beyond this first stage of merely policing the schools. Indeed, one sees the real justification of a separate school health department if he follows this health department into what may be called its second, third and final stage of evolution.

The Second Stage of Medical Inspection

Educators and anxious parents had for some time been wondering why all children did not progress at the same rate or rather why some children lagged behind in their studies.

Examinations by physicians within the last decade indicate that as many as five per cent of school children suffer from defective vision to such an extent that they cannot see lessons on the board unless they have the services of expert oculists, that one in every hundred cannot hear what the teacher is saying, that ten in every hundred are so "stopped up" by adenoids that attention to school work is nearly impossible until the science of medicine gives them relief.

This drew the attention of the educational world to the necessity of ridding children of these defects in order that they may take advantage of the educational opportunity offered in the schools. In the light of these facts, far-seeing

business men voted money for physical correction work on the ground that it would lessen absences from school and many of the failures in school, both of which are very expensive because they represent waste of the time of pupils and a corresponding waste of the efforts of the schools. One writer[1] estimates that physical defects alone are responsible for five per cent of elimination, six per cent of non-promotion, and seven per cent of retardation of school children.

One characteristic development shown at this second stage of school health organization is the employment of the school nurse. The school nurse marks the growth of the health era away from its first or merely policing stage. The school nurse is at once a medical officer and a teacher. She teaches the parents in the home and she teaches the children. She becomes a most important link between the home and the school. Her methods are those of persuasion, not those of the emergency police officer. The records of the St. Louis department show, as do the records of all the great cities in the country and many of the smaller towns as well, that the school nurse has been the means of rendering thousands of children relief from physical defects. This has made children who were failing successful and families as well as pupils intelligent on matters of health.

The Third Stage of Medical Inspection

Once the idea of making health a matter of intelligent interest took root, it was sure to grow. Correction of physical defects is itself a tardy method of dealing with the situation. Why not prevent the defects? This kind of thinking turned attention to the environment of the child and the necessity of making it as conducive to health as possible.

Positive steps in promoting sanitation of the school and the home have resulted in better conditions on all sides. The

[1] "Educational Hygiene."—Dr. Rapeer.

school has had a large part in the whole civic movement for what is known today as preventive medicine.

So many of the bad conditions in every city are due to "ignorance of the laws of hygiene" that medical inspection has passed out of the first stage of mere policing, out of the second stage of mere correction, out of the third stage of prevention through sanitary measures alone, into the development of higher ideals of healthfulness.

The Fourth Stage of Medical Inspection

Finally, it is by no means satisfactory that we should stop with the negative work of preventing disease and unfavorable conditions. We must be positive in our treatment of health. We want more health, more vigor, more efficiency. The fourth stage of medical inspection may properly be called the health development stage and has to do not only with the teaching of hygiene but with the development of higher ideals of wellness, with the raising of the standard of normality, with taking a person who is well and making him "wellest." For instance it is possible by observance of hygienic laws to attain to our present standard of wellness, but students of health have come to the realization that our standards are far too low and that there are "heights of wellness" to which we have not as yet climbed. Showing the way to these "heights" demands a newer and different technique than that practiced in the usual system of prevention. The writer believes it represents a definite final stage in development.

The clearest evidence that the school has been right in its health work appears in the fact that all over the United States the effort is being made to push the campaign for health along exactly these lines. The medical work in St. Louis schools has been moving in the right direction. The history of the development points the way for further development. The department must constantly assume new

functions without dropping any of the old. If it is to be an efficient department, it must carry on all of the activities suggested in the summary which can be made up from the foregoing study.

First Stage—Inspection.

1. Inspection of children for contagious diseases.

Second Stage—Discovering and correcting defects.

2. Physical examination of all children.
3. Follow-up work in the home to get corrections.
4. Maintenance of school clinics.

Third Stage—Prevention.

5. Sanitary inspection.

   Hygiene of building.
   Hygiene of curriculum.
   Hygiene of instruction.
   Special schools for special cases.

6. Examination and inspection of principals, teachers, janitors and other employees.

Fourth Stage—Health development.

7. Health teaching at school and at home.
8. Establishing health habits by means of

   a. Toothbrush drills.
   b. Handkerchief drills.
   c. Bathing, etc.
   d. Health clubs.

In carrying on this large health program the school health department is in no way opposed to the city health department. The school health department supplements and extends the work of the city department. This it can properly do because the children are especially in need of health education and care, because they are brought together daily

under highly artificial conditions in school buildings, and because health control is only one phase of education.

Even where the functions of the city board and the school board closely coincide, namely in the control of contagion, there is need of educational training. The city department should and does exercise police power. The school health department should not adopt an authoritative attitude; it should depend entirely on education. It should be a child-helping agency. One of the causes of a most slow development of the technique of health teaching by boards of health has been the availability of the "Big Stick" which made the development of another procedure seemingly unnecessary.

The writer has seen in a number of instances educational technique develop immediately on the doing away with police power. Doctors and nurses, eager to report "corrected cases" vie with each other in inventing ways and means of demonstrating to parents the needs for correction. The efficiency of this procedure also might be judged by the fact that in one school department the gain for the year during which "persuasion" was used over the preceding year when compulsion was practiced was 125 per cent, the size and personnel of the staff remaining the same.

The Hygiene Department Today

The Hygiene Department, now consisting of one supervisor, 11 inspectors and 22 nurses, is conducted as part of the Department of Instruction and is controlled by the Superintendent of Schools. It is therefore brought closely in touch with the educational work of the school.

The function of the Department according to the records of the Board of Education (Rule 44, Sect. 11) is as follows:

The work of this department shall be:

To examine the pupils for the purpose of ascertaining the existence of any physical defect that interferes with their progress in the school, and to report any such defect

to the parents, and advise that the family physician be consulted.

To examine all evidences of the presence in the schools of communicable disease and to make prompt report of all cases of such to the Board of Health or its officers.

To examine the sanitary condition of the school premises, and to make report of it to the Superintendent of Instruction.

The Department has grown in keeping with the spirit of this work to the point where it performs the following detailed functions.

Makes a physical examination of each elementary school child each year

Inspects for contagious diseases, tending to keep children in school

Looks after vaccination

Examines all Normal School girls and new teachers

Examines all new janitors

Inspects for unsanitary conditions in the schools

Advises parents with respect to defects of children and assists them in bringing about corrections

Examines for working permits those persons which the Attendance Department refers to it

Examines physically children being sent to special schools

Does educational work (health teaching) of great value both in individual work with children and by occasional addresses to parents, teachers and associations.

General Estimate of Department

It is evident from the above statement that the St. Louis department has sensed its function and is operating in each of the fields suggested by the four stages in the development of medical inspection.

It is doing most of its work well and at small cost. The exact cost per child last year was $.34. The $.34 per child per year thus invested is returned many fold to the citizens

of the city. The writer knows of no department in the country which looks after contagious diseases better than the department in St. Louis. The co-operation which has been worked out with the Board of Health is excellent.

Vaccination is efficiently promoted and the St. Louis schools are practically safe from smallpox. Physicians from the Board of Health come to the schools at certain times and vaccinate, free of charge, all those children who present themselves. This is done in the fall and spring when children are wearing light clothing and infections (sore arms) are very rare.

The Department co-operates with the Health Department and keeps in school, *but under daily observation,* all children who have been exposed to measles, mumps, chickenpox, whooping cough, diphtheria, and scarlet fever. It used to be thought necessary to close the school and send children home in such cases. This lost control of the situation on the part of the public authorities, threw excessive responsibility on the home, and scattered contagion. The present method of keeping children under observation, while it necessitates a more fully equipped department, is undoubtedly more economical in the end. It is surprising to note the small number of these children who develop the disease to which they have been exposed. This is a noteworthy feature of the work of the St. Louis Department and undoubtedly saves hundreds of days schooling for the children, or to put the matter in other words, saves the city a great deal of human energy and time.

Another piece of work which is especially well done is that for pre-tuberculosis children; the new open air school accommodating 160 children is without a superior in the United States today, and the results obtained more than justify the expenditure.

The physical examinations which the Department is able to give are superficial because of the fact that each inspector has about 9,000 children under his care, which means that his physical examination must be done in two or less minutes. In

this respect, as will be shown in a subsequent table, St. Louis is behind most progressive cities. The follow-up work in the homes is done by well trained, sincere, efficient nurses with as great efficiency as can be expected from workers who are overburdened with an extra heavy load. Each of the nurses in the St. Louis Department has about 5,000 children under her care; this is just double the number which can be efficiently cared for by one nurse.

Despite all the limitations which are imposed on this most important work because of the heavy load, St. Louis is more than getting its "money's worth" out of the Department of Hygiene.

What St. Louis needs is to enlarge its work along all the lines it is now pursuing. Table II furnishes data which indicates that St. Louis is not spending as much on its Department of Hygiene as ought to be spent. The examples of other cities are offered in support of this judgment.

This table shows that among the eight cities enumerated St. Louis is lowest in the number of inspectors supplied per thousand children, fifth in the number of nurses, while it is lowest in the cost per child, being about one-half as cheap as the most generous city and about twenty per cent less than the next lowest city.

Suggestions for Improvement of the Service

There are certain phases of the present organization which in the judgment of the writer call for consideration and probably readjustment. Few of these readustments can be made in such a way as to reduce the cost of the work. In many cases enlargement is urgently needed. In several cases no extra cost would be involved in carrying out the change suggested.

The Hygiene Staff and Its Work

The *Supervisor* is appointed by the Superintendent and spends all of his day-time in the work. He is paid $3,500 per

TABLE II

MEDICAL INSPECTION IN 1914-1915

City	Number of children under inspection	Supervisors	Inspectors	Nurses	Dentists	Dental nurses	Hours per day by inspectors	Hours per day by nurses	Annual salary of supervisors	Salary per hour of inspectors	Salary per hour of nurses	Total cost of medical inspection	Cost per child	Number of children per inspector	Number of children per nurse	Number of children whose defects were corrected
Boston	111,200	1	41	39	0	0	3	6	3,750	.83	.61	77,900.00	.70	2,712	2,852	?
St. Louis ..	99,446	1	11	20	0	0	5½	8	3,500	1.36	.42	33,890.67	.34	9,041	4,972	11,056†
Cleveland . .	88,145	1	16	26	5	5	3½	8	3,500	1.43	.51	37,084.62	.42	5,509	3,390	9,922
Pittsburgh .	78,873	1	30	12	8	8	5	8	5,000	1.25	.43	65,700.00	.83	2,629	6,572	3,523
Detroit	110,000*	1	40	15	25	10	3	8	.....	1.00	.51	52,000.00	.47	2,750	7,333	4,169
Milwaukee .	57,924	1	11	11	2	1	2	8	3,800	1.50	.48	28,467.32	.49	5,266	5,266	1,702
Newark . ..	69,994	1	10	26	0	0	2	8	2,350	1.04	.52	35,451.35	.51	6,999	2,730	?
Minneapolis	51,449	1	8	27	1	1	3	8	3,600	1.09	.51	32,960.00	.64	6,437	1,907	?

* Includes parochial children.
† Includes children whose defects were corrected, also those who were treated by family physician and dentist.

year. He maintains a private office and "outside of hours" carries on a limited private practice.

We do not think that is the most efficient arrangement. Both Educational Hygiene and the Practice of Medicine are extremely broad fields, and each demands the full time, thought and energy of a man if he is to maintain a maximum of efficiency. The time required for a man to "keep up" in the field of Educational Hygiene where the demands are for knowledge of Sociology and Pedagogy as well as Hygiene leaves no time for a man to "keep up" in medicine.

The salary here, while not large, is large enough to secure such a man if tenure of office is assured, but even if it proves necessary to raise the salary in order to secure the full time of this officer, St. Louis would profit by doing so.

The *Inspectors* (School Doctors), eleven in number, are appointed after a competitive examination given by a committee composed of the Superintendent, Assistant Superintendent, and the Supervisor of Hygiene. All who pass the examination are placed on an eligible list from which the inspectors are chosen according to standing. This plan is a good one if standards are kept very high, but if not, when the bottom of the list is reached, the appointments must be made from men who are inferior to some available men who have not had an opportunity to compete. The writer believes that much time and energy would be saved and better results obtained if the appointments were made on recommendation of the Supervisor and Superintendent.

These inspectors spend five and one-half hours per day in the work, and are paid for ten months according to the following schedule:

1st year	$120.00 per month
2nd year	130.00 per month
3rd year	140.00 per month
4th year	150.00 per month

This salary includes traveling expenses.

Table III indicates the training and experience of each inspector on the staff.

TABLE III

TRAINING AND EXPERIENCE OF INSPECTORS

	Graduate of high school	Graduate of college	Graduate of good medical college	Hospital training	Number of years practice	Does he drive auto	Age
Dr. A . . .	yes	yes A.B.	yes	yes	10	no	34
Dr. B . . .	yes	yes B.S.	yes	yes	13	no	41
Dr. C . . .	yes	no	yes	yes	17	yes	38
Dr. D . . .	yes	no	yes	yes	3	no	26
Dr. E . . .	yes	no	yes	yes	12	no	38
Dr. F . . .	yes	no	yes	yes	15	no	37
Dr. G . . .	yes	no	yes	yes	10	yes	34
Dr. H . . .	yes	no	yes	yes	10	yes	34
Dr. I . . .	yes	no	yes	yes	49	no	72
Dr. J. ..	yes	no	yes	yes	23	no	51
Dr. K. ..	yes	no	yes	yes	8	no	34
Average .	all	2 of 11	all	all	15½	3 of 11	40

The inspectors are mature men of experience. They are all graduates of good medical schools and have all had hospital training. They are deeply interested in their work and in personality are above the average.

Probably no better body of inspectors could be provided under the present conditions of salary and hours of service. The recommendation which is to be made at this point will have to take the form of a question with regard to the possibilities of securing more efficient physicians through a reorganization of the system.

Of the eleven inspectors only two are college graduates, and although they have been in private practice on the average for fifteen and one-half years, only three have acquired a private practice which makes an automobile indispensable.

While statisticians tell us that the average income of physicians is something less than $1,000.00 per year, physicians of the personality, training and experience needed and procurable for medical inspection work are making between

$2,000.00 and $5,000.00 per year in the early years of their practice. This type of man cannot give up his entire day (8:30 A. M. to 4:00 P. M.) for a salary such as is paid here. St. Louis is at this very time in danger of losing some of her best inspectors for this reason. A high-grade, successful physician can, however, manage to give his morning hours to work of this kind and still take care of a good practice ($5,000.00 to $10,000.00 per year), one which makes a machine indispensable.

The survey believes that aside from the matter of time required that the present plan is uneconomical. The schedule in Table IV shows the time spent in the building and "on the cars" by one of the inspectors who does not have an automobile, and indicates that about 32 per cent of his time is spent in getting from one school to another.

If a reorganization of the work of the inspectors were made along the lines suggested, it is believed by the Survey that a more efficient staff of inspectors could be secured.

We believe that adopting the half-day schedule and increasing the staff would not only result in a higher grade staff but would be economical of time, and hence, more productive of results.

Finally, St. Louis is now paying her inspectors at the rate of $1.36 per hour. If she were to increase this to $1.50 per hour and adopt the three-hour day, she could on her present budget hire seventeen inspectors for the nine months of school. This would give fewer schools per doctor, therefore save much time now spent getting from one school to another and secure some of the advantages presented above.

In addition to the reorganization of the staff it is recommended that the method of operation be systematized. At present the inspectors have no uniform method of procedure and no generally adopted or well thought out technique; neither do they have a common understanding as to just what constitutes a defect. Organization for the accomplishment of these ends will require for its effective carrying out no

TABLE IV

Table Showing Number of Minutes Inspector Spent In and Out of School Between 9:00-12:00 and 1:00-3:30

Monday			Tuesday			Wednesday			Thursday			Friday		
School	In	Out	School	In	Out	School	In	Out	School	In	Out	School	In	Out
B	20	25	B	30	15	H	20	25	B	20	25	B	30	15
I	25	35	S	30	30	C	30	25	I	25	35	S	30	30
L	15	35	B	30	10	E	30	20	L	15	35	B	30	10
B	25	..	S	35	..	C	30	..	B	25	..	S	35	..
Noon			Noon			Noon			Noon			Noon		
B	60	30	B	60	30	L	60	35	C	60	30	B	60	30
H	60	..	E	60	..	I	45	..	C	60	..	B	60	..
Total . .	205	125		245	85		215	105		205	125		245	85
Total . .	1115	525	or 32 per cent of time spent en route.											

increase in the staff above and beyond the readjustment recommended above. Attention to this feature of organization will be repaid by a great increase in efficiency.

If St. Louis is to live up to her ideal of physically examining each child each year, the inspectors must be increased in number so that on the three-hour per day basis there are no more than 5,000 pupils per inspector.

The *School Nurses,* twenty-two in number, are all high-grade women and registered nurses. They are doing excellent work but do not reach the full efficiency of which they are capable because they are not organized under a head nurse. Working out the proper technique for each operation makes for a greatly increased efficiency, and we believe that a head nurse should be appointed for that work here.

One nurse is now being used to do office work which a good clerk could do. If this clerk were also a stenographer, the Department would profit much by the change.

The nurses work from 8:45 A. M. until 5:00 P. M. each week day except Saturday, when their work closes at 1:00 P. M. They are paid for ten months, according to the following schedule.

1st year	$60.00	per month
2nd year	65.00	per month
3rd year	70.00	per month
4th year	75.00	per month

Since 1912, however, finding that it was impossible to secure trained nurses at the lower salaries, the Department has been paying beginners $70.00 per month and increasing the salary to $75.00 the next year. While the beginning salary is about the same as that being paid in other large cities, the highest salary which a nurse can get here is considerably lower than that paid in other large cities. (See Table II.)

The work of the school nurse is one of the most important undertaken by the school. She is the most active agency of

co-operation now existing between home and school. Abundant testimony is available to show that her influence is felt not only in the field of hygiene but in the moral and educational field as well. She it is who explains the findings of the inspector to the doubting mother; she it is who tells the mother how to care for the child who is ill and who in hundreds of cases conducts the children to the free clinic, where eyes are tested and glasses furnished or adenoids, which prevent proper breathing, are removed. She also does inspecting for contagious diseases in the school and is almost as unerring in her diagnosis of it as the inspector. However, she never trusts her diagnosis, always referring the case to a physician.

The school nurse is so valuable an asset to the school that St. Louis must gradually increase the number so that each nurse has under her care not more than 3,000 children, and in very congested districts not more than 2,000.

We present in Table V a history of a "Day with the School Nurse," which tells better than many words of the varied activities of these officers.

TABLE V

A Day With a School Nurse

8:45-10 A. M. AMES SCHOOL

Absentees inspected, 12
Vaccination scars inspected, 16

Edna Bowenschulte, F. Susp. mumps. Form 11a. Sent child home.
Mother of Rosalyn consulted me in regard to clinic hour.

10:10-11:30 WEBSTER SCHOOL

Absentees inspected, 16
Contact inspections (measles), 11

Beulah. Skin. Form 11a. Sent child home.
Mother of Alma consulted me in regard to medical clinic.
Mother of Loretta consulted me in regard to cost of artificial eye.

11:35-12 DOUGLAS SCHOOL

Absentees inspected, 6
Contact inspections (measles), 3
Contact inspections (chickenpox), 1

12-12:15 Copied 11-J Health Department

12:15-12:45 Lunch at Douglas School

1:15-3:30 P. M. JEWISH HOSPITAL CLINIC

Henry M, foreign body, eyes, yes, new case.

Oliver M, vision, yes, new case.

Melba F, ad. and hypton, yes, new case, adenoids and tonsils removed.

Bennie M, ad. and hypton, yes, new case, adenoids and tonsils removed.

Rosalyn F, ad. and hypton, yes, old case, adenoids and tonsils removed.

Left Jewish Clinic at 3:30 with Loretta to go to optical company. Arrived at 3:50. Had frames for glasses fitted, also an artificial eye for this child. Left there at 4:20 P. M.

Then made a visit to Ellis' home, 4:40 P. M. Advised mother to have child's adenoids and tonsils removed, which she agreed to do, and signed consent blank for same. Left there at 4:55 P. M.

More Economical Records

A reorganization of the staff would leave the present officers with more time in which to organize their work. This would in turn increase the efficiency of the department. Indeed, there is a possibility of improving the situation even now by more careful detailed organization in the Supervisor's office; especially is this true in the matter of records. This fact is recognized and the Supervisor is now engaged in revising the blanks. The present blanks demand too much writing on the part of the inspector and nurse, and do not keep the Supervisor closely enough in touch with his workers.

Daily reports indicating time of arrival and leaving schools rather than weekly reports should be made by both inspectors and nurses and all the compiling should be done by a clerk in the central office.

There is at present no "Pupil's Health Record Card," which follows him through the grades; this ought to be and is to be furnished.

The forms used for informing parents of the physical defects of their children can be made most educational by having printed on the back information concerning the importance of caring for the special defect indicated. In St. Louis one form is used for all defects and the inspector is required to write them in. It would make for efficiency from every point of view if separate forms were used for the most common defects and the reverse side used for a health message. Examples of the reverse side of three such notices are given in Table VI.

TABLE VI

Take Care of Your Eyes.—Blindness is one of the most serious afflictions that can happen to you.

If the margins of the eyelids are red or sore, if the lids discharge, if the use of the eyes causes them to pain or the head to ache, if the letters on the page blur or become indistinct, if the eyes are not straight, the eyes should be examined by a competent person.

The temporary or baby teeth should not be allowed to decay. Naturally they are pushed out by the permanent teeth which succeed them. The permanent teeth should last throughout life. Decayed teeth frequently cause indigestion from the swallowing of offensive material in the mouth and from improper chewing of the food.

Decayed teeth frequently cause sore throat because they harbor germs in the mouth.

Loss of teeth produces irregularity of the remaining teeth and unfortunate facial appearance.

"Clean teeth don't decay—
A toothbrush keeps the germs away."

Obstruction of the nose is usually caused by (adenoid) growth of spongy tissue located far back at the opening of the nose into the throat.

Adenoid growths frequently cause nasal catarrh, deafness from extension of catarrh to the ears, frequent sore throat from mouth breathing, and flat chest and stoop shoulders from improper breathing.

The correction of this existing condition will promote a more healthy and normal growth of your child.

The records should also show the number of corrected cases. This is the chief index of the efficiency of the department. "How many children did you succeed in persuading to rid themselves of defects?" is the important question. St. Louis records do not show this. When a case is reported under treatment by family physician or dentist it is taken for granted that the case is corrected. This is not justifiable and the records should indicate just how many children have been "cured."

Equipment in Rooms and Apparatus

The facilities provided by the Board of Education in St. Louis for the carrying on of this work are not as complete as those furnished in other large school systems.

Emergency rooms with running water are furnished in only a few buildings, and in only thirty-one buildings are there available special rooms in which physical examinations and inspections can be made. In all the other (seventy-four) buildings the inspectors and nurses are forced to conduct their work in hallways, stair landings, vacant classrooms, principals' offices and in some instances in bathrooms and janitors' offices.

Other large cities have found by experience that money invested in school dispensaries or emergency rooms pays large dividends in added efficiency of the medical inspection department.

In every building there should be provided a dispensary which may be used for other purposes at times but on which the inspectors and nurses have first call. These rooms should be equipped with hot and cold water, cabinet, chair and desk.

An equipment which answers the purpose very well is given in Table VII, with the approximate cost.

TABLE VII

A SATISFACTORY DISPENSARY EQUIPMENT

1 White Enamel stool, Kny Sheerer Catalog, 1353-S.	
1 White Enamel basin stand, Kny Sheerer Catalog, 1843-S.	
1 White Enamel dressing pail, 14 qt. with cover and drain.	
1 9" White Enamel pus basin.	
1 Pair 7" Lesters Bandage Shears, angular, Kny Sheerer B-8114.	
2 ¼-gallon glass dressing jars, overloping lids.	
2 16-oz. Tincture bottles, clear glass, ground glass stoppers.	
1 5" Thumb Forceps.	
1 Hartman's nose speculum.	
1 3½ Bosworth Head Mirror with leather band, Kny Sheerer, C13989.	
1 Ear speculae Nests—Gruber's metal.	
1 Ear Irrigating syringe, 2 oz., all metal, matchless.	
1 White enamel pitcher, 6 qt.	
1 White enamel dressing table, glass top with 2 glass shelves, 16x 20, ground glass, polished edges, white enamel rail, tubular construction.	
1 Leather vest pocket surgical case with artery forceps, extra, Kny Sheerer Catalog, B-9208.	
Total cost of above	$29.32
1 Reed Couch Ypsilanti No. 243, 74"x25"	6.30
1 Roll Top Desk, single pedestal, 42"x32" qr. oak, 5 ply wood drawers on right side. Writing pad and desk top to be of uniform thickness throughout	26.50
1 Desk Chair, Sikes No. 245	5.75
1 Medicine Cabinet	30.00
	$97.87

First quality Greenwich linoleum, standardized pattern, approximately $1.40 per yard.

Besides this equipment a well selected list of salves and simple remedies should be provided for the caring for those cases which are considered too trivial to send to family physicians.

There should also be adopted a policy which will gradually equip all old buildings with small rooms at least 6x15 feet for the inspector and nurse where their work can be carried on in the privacy demanded by efficient work of this kind.

In many of the buildings these could easily and inexpensively be constructed in the halls; panels, the upper part of which is filled in with semi-transparent glass which would not cut off hall light, might be used.

One chair dental clinic is owned by the schools and supplied with an operator nine hours per week by the St. Louis Dental College. The free dental clinics provide fifty chairs for the use of school children for a certain number of hours per week, the total time amounting to three hundred seventy-four chair hours per week. These chairs are not available for colored children who are in serious need of dental work. The Board of Education ought to furnish dental facilities for these children.

St. Louis is especially well equipped with free clinics, no less than thirteen being available for children as well as adults. The hearty co-operation given the Department by the charity organizations of the city aids much in accomplishing results.

There is one handicap under which the department operates at the present time which an enlightened public opinion could remove at once. The department hesitates now to antagonize the physicians of the city by treating cases. The department is over-careful in this matter. Petty difficulties are now referred to physicians when they ought to be taken care of without a physician's prescription. The safeguard which the physicians of the city have a right to demand in such cases will be provided by the record cards recommended above, and

the service which the citizens have a right to expect will be rendered. The rule now strictly followed which forbids "any school doctor to treat a child in school" does not make for efficiency. *Any child who presents a petty ailment making him less able to get the most out of the school work should be treated in school or advice should be given to the parents which will bring about a cure.* The duty of the department is done if cases other than these petty cases are referred to physicians.

In the schools I saw cases referred to "the family physician" which practically no one would ever think of taking to a physician. Nearly anyone would use common "home remedies" for them.

The writer saw the following petty ailments referred to the family physician:

a. Swollen cheek—child said someone hit her.

b. Conjunctival hemorrhage—injured in basketball game.

c. Impetigo (beginning).

This procedure does not accomplish the end sought and tends to arouse the criticism that the "school doctor expects you to spend all your money at the doctor's office."

In St. Louis hundreds of children have been excluded from school because of such ailments as pediculosis (head lice), impetigo or ringworm and have lost many days schooling who would have been kept in school if the inspector or nurse had been permitted to inform parents of simple home remedies which cure. In many instances it is necessary for the nurse to go into the home and demonstrate the method of using these medicants.

In determining action along this line the sociologist must add his argument to those of the doctor. The object should

be to get the child cured of its ailment as soon as possible so that it may perform its social duty. This is more important than the observation of medical ethics.

Another change in policy which is urgently recommended is made in the spirit of this whole report. A school department should do as little policing as possible and as much persuading and educating as possible. Too often, in our judgment, the department has felt it necessary to force acceptance of its recommendations by bringing up before the Juvenile Court those parents who refuse to follow them. We do not believe that in the long run this makes for intelligent pursuit of health. It usually angers the parents prosecuted and sometimes the whole community, which is therefore placed outside the field of influence of the inspector and nurse To be sure, court procedure is an easy way for inspector and nurse to get corrections, but they tend to retard the development of social means and the experience of departments which have adopted the policy of persuasion has shown that the help of the courts is ordinarily, or one may safely say, absolutely unnecessary. Parents love their children, and if a technique is developed which convinces them that the treatment recommended is the best for the child, it will be done.

Furthermore, since the work of the department is just as educational as that of the teachers of other subjects than health, it is believed that the present policy of the department is not as aggressive as it might be. At present the department feels that it should bother the teachers as little as possible.

We believe that the policy of not "bothering" the teachers is carried entirely too far and as a result there is little constructive work along educational lines approved in other progressive cities such as handkerchief drills, toothbrush drills, health talks and classroom inspections. Every teacher has a definite responsibility with reference to the health of children and should be "bothered" about it.

The St. Louis Department has been spending a great deal of time on inspecting daily all those children who have been exposed to any of the contagious diseases. This, as has been pointed out before, undoubtedly saves many school days for these children. Our observation, however, indicated that much of this time was wasted because a majority of the cases inspected for measles, chickenpox, and whooping cough, had already had these diseases and consequently were in no danger from them. A history of a child's having had any of these diseases should exempt him from inspection, and this time put on other work.

SUMMARY

This report was made on the basis of conferences with the President of the Board of Education, the Superintendent of Schools, the Supervisor of Hygiene, principals of buildings, teachers and children, also on observation of the work of doctors and nurses in the schools, on visits to twenty-two buildings and a study of the annual reports of the department of hygiene dating back to its beginning.

Medical inspection has grown into a field which cannot be filled so effectively by any other health-promoting organizations. Its functions are:

1. To determine by physical examination the physical condition of each pupil.

2. To correct all defects which tend to inefficiency.

3. To make the school environment as healthful as possible.

4. To so instruct pupil and parent in health matters that proper living conditions will be established.

The St. Louis Department of Hygiene is doing something along all these lines and the work which it does more than justifies the money spent on it.

The work of the Department would be made much more efficient if the following suggestions would be carried out.

1. Require full thought, energy and time of supervisor after making salary satisfactory and insuring tenure of office.

2. Modify the plan of employment of inspectors work only three hours per day; then appoint enough so that each inspector will have only 4,000 or 5,000 children under his care.

3. Appoint a head nurse and increase salary of nurses by adding two or three classes to the present ones, making a salary scale for the first, second, third and fourth years respectively $70.00, $75.00, $80.00, $85.00 per month.

4. Adopt a policy which will eventually furnish an emergency room or inspector's office with a limited equipment in each building.

5. Organize for most extensive use of free clinics and furnish dental facilities for care of the teeth of colored children.

6. Extend examinations to all principals, teachers, janitors, lunchroom employees, and applicants for working permits.

7. Revise the system of keeping records so that clerical work is minimized and done in the central office, so that the supervisor is kept in close touch with his workers and so that a child's "health record" follows him through the grades.

8. Modify existing policies to permit of

a. Acting only as an advisor to parents and children, never adopting an authoritative procedure.

b. Treatment of certain ailments in the school or at home on advice of inspector or nurse.

c. The conduct of schoolroom inspections, toothbrush drills, handkerchiefs drills, etc.

d. Inspector and nurse working together during the physical examination period.

e. Exempting all children from "contact inspection" who give a history of having had measles, mumps, chickenpox or whooping cough.

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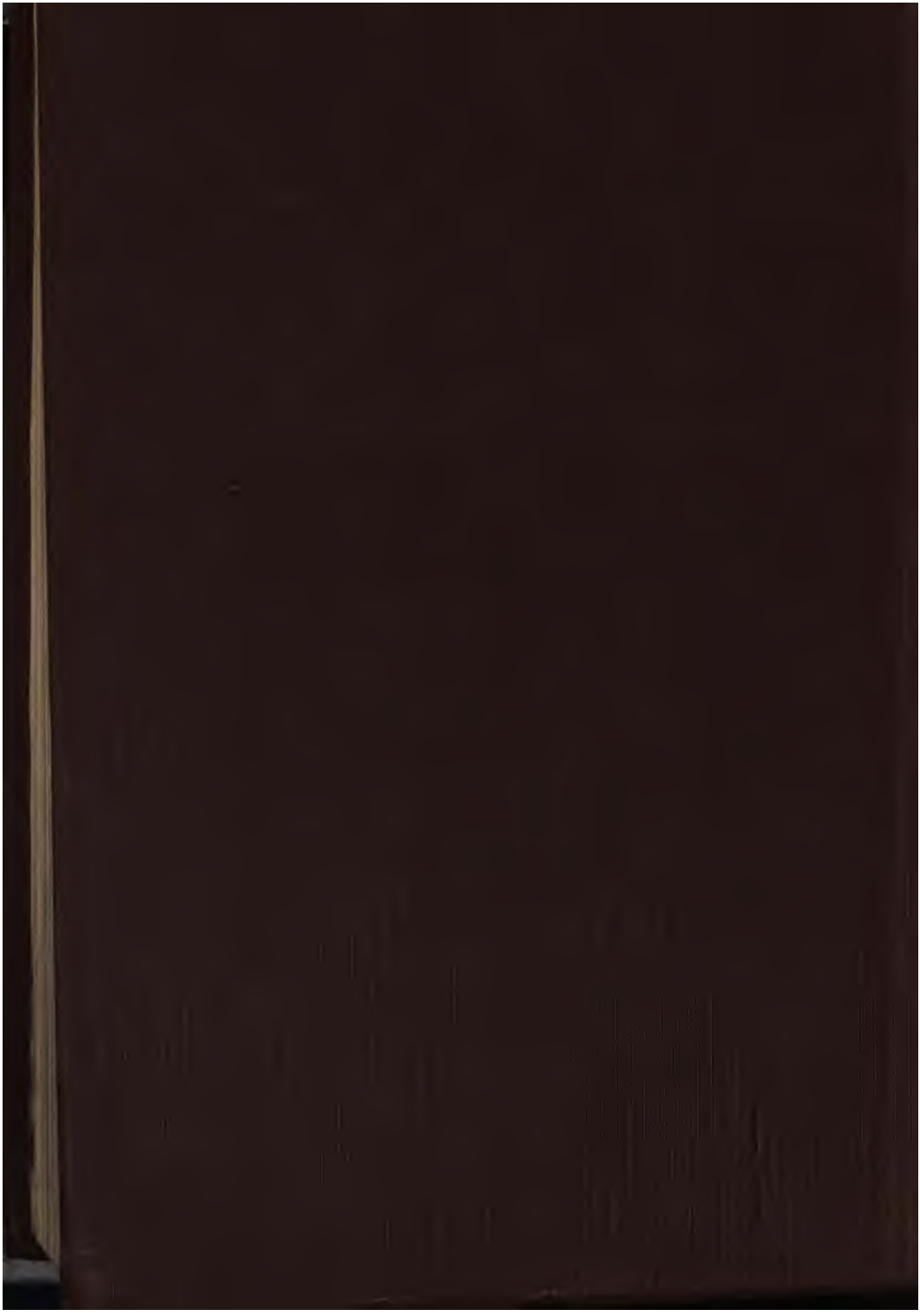
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